

**The Potential of the People's Republic of China**  
**as a Market for NZ Radiata Products**

**by Maree Candish**

---

A dissertation submitted  
in partial fulfillment of the  
requirements for the Degree  
of the Bachelor of  
Forestry Science

---

1988  
University of Canterbury

# **1 CONTENTS**

---

**ii Abstract**

**iii List of Figures and Appendices**

**iv Introduction**

**v Data Collection and Presentation Method**

## **1. NZ'S POSITION AS AN EXPORTER**

1.1 NZ's Pinus radiata Resource	2
1.2 The Political Framework for Trade	6
1.3 The Trade Balance	9

## **2. THE CHINESE DISTRIBUTION AND MARKET SYSTEM**

2.1 Government Control of Economy	11
2.2 The Wood Market	13
2.3 Distribution of Imports	15
2.4 Methods of Trade	21

## **3. THE DEMAND/SUPPLY BALANCE FOR WOOD PRODUCTS**

3.1 Rising demand	25
3.2 The domestic supply	37
3.3 The domestic deficit	40

## **4 THE DEMAND/SUPPLY BALANCE FOR INDIVIDUAL WOOD PRODUCTS AND THE POTENTIAL FOR NZ EXPORTS**

4.1 Logs	43
4.2 Sawnwood and Furniture Components	53
4.3 Paper and Paperboard	59
4.4 Pulp, Chips and Chipwood	64
4.5 Panelboards	66

## **5 SUMMARY AND RECOMMENDATIONS**

71

**References**

**Appendices**

## **ii Abstract**

It is concluded from a review of literature that there is a large and increasing demand for forest products in China which domestic supply is unable to meet. Indications are that continuing economic reform will allow exporters to supply a substantial part of the predicted deficit of over 200 million m<sup>3</sup> in 2000.

There is, and will be, a market for relatively unprocessed products such as logs and wood pulp. A market for more processed products is also expected to develop due to an industrial infrastructure which is inadequate to meet increased processing requirements.

However competition from other exporters with greater resources and government support for market development will be strong. Discussion with people involved in wood product marketing in NZ indicated that only the largest forest product companies are pursuing the Chinese market. Continued co-operation between NZ exporters will be important to make the most of limited resources. Although the option of investment in Chinese wood processing facilities is not favoured by NZ exporters at present, it is recommended to ensure a continued market for NZ radiata products.

### **iii List of Figures**

1.	NZ's demand and supply of wood 1988-2000	3
2.	NZ exported forest products by country of destination	5
3.	Location of Ports in China	18
4.	Map of China	20
5.	Chinese consumption of wood outside the State Plan	28
6.	Allocation by enduse of State Plan Wood	30
7.	Prediction of State Plan requirements, Non-State Plan requirements and Domestic Production	40
8.	Use of imported logs 1985	45
9.	Suppliers of logs to the PRC 1986	48
10.	China's zones for Economic Investment	Appendix 4

### **List of Appendices**

1. People interviewed for this report
2. Justification of New Zealand supply and demand
3. Chinese Tariffs on Imported Forest Products (1988)
4. The environment for Foreign Investment in China
5. Chinese commodities currently exported to New Zealand

#### **iv. Introduction.**

---

In past analyses of export markets for NZ's radiata pine resource, the People's Republic of China has most often warranted only a cursory statement to the effect that it is a market of great potential. This vagueness was due to the difficulty in determining;

- 1.Chinese demands for wood products
- 2.Chinese domestic supplies of wood products
- 3.the likelihood that political forces would  
allow any demand shortfall to be met by imports.

With China's more open economy, New Zealand is in a position to better assess the potential of China as a market.

The purpose of this study is to determine whether the PRC does present marketing opportunities for sellers of NZ radiata pine and, if so, what is being done, and what should be done, to pursue these opportunities.

#### **v. The Collection and Presentation of Data.**

A comprehensive literature review was undertaken to gather information relevant to the supply and demand of forest products in the PRC. It is inevitable that in such a large country which until very recently has had inadequate data collection mechanisms and a closed door to the world, accurate information is difficult to obtain. This situation is made worse given the fact that this information is usually filtered through translations and misunderstandings before it is published in English.

A study of the literature revealed enormous discrepancies in supply figures, many the result of authors using official figures as total figures when, in fact, they represent only the volumes under the planned sector of the economy. Another common error is the use of reported production capacity as total output resulting in highly inflated figures.

Although much effort has been spent in reconciling data, it is important to recognise the potential for error in all quantities given, particularly forecasts. This potential for error is illustrated by the fact that in 1987 one group of researchers estimated China's State Plan wood production to be 147 million m<sup>3</sup> in excess of State Plan demand in the year 2000 (Zhu, James, Hanover 1987), while another has predicted a deficit of 50 million m<sup>3</sup> (Sun, 1987). The magnitude of this discrepancy is put into perspective by the fact that NZ's total wood production is estimated to reach only 20 million m<sup>3</sup> by 2000.

Another difficulty in obtaining accurate information is the rapid rate of change in the economy of China. Information more than two years old is of little use as a description of present day conditions. For this reason, much use has been made of newspaper and magazine articles.

Attempts have been made to quantify demand. This has not been possible for all products and in these cases only expected trends have been given.

Hong Kong is scheduled to rejoin the PRC in 1997. Hong Kong has a high requirement, relative to its size, for building products including plywood, wooden fittings and joinery and no capacity for domestic supply. No import duties or barriers apply to building and furnishing materials (Chan, 1987). It also imports and reexports large volumes of wood products, mainly to the PRC.

There is certainly potential for NZ exports to Hong Kong but because it is to continue operating as an entity rather separate from the PRC and without the governmental controls experienced by the rest of the country, it has not been considered further in this report. All figures given exclude Hong Kong and Taiwan.

Most of the people responsible for the present development work by NZ in the Chinese forest product market have been interviewed (see Appendix 1). The information they provided on their companies' involvements and their opinions on future development are incorporated into the report.

## 1. New Zealand's Position As An Exporter



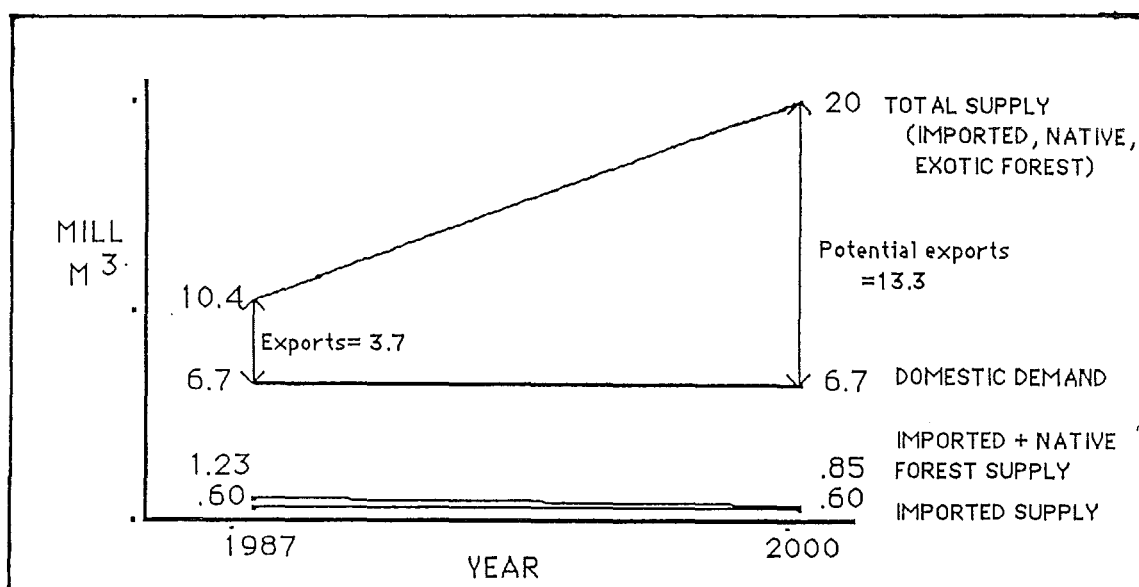
### 1.1 NZ's *Pinus radiata* Resource

Figure 1 shows that most of the wood resource available to New Zealand in the future will be from the exotic plantation forests. Over 95% of these forests are of *P.radiata* and the species accounts for an even greater percentage amongst the younger age classes. The consensus of several different sources (MOF, 1988; Levack, 1986; Bourke, 1987; Bourke, 1988) is that the NZ produced exotic log supply will double to approximately 20 million m<sup>3</sup> by the year 2000. Of this, approximately 3 million m<sup>3</sup> will be from pruned trees compared to the present 0.4 million m<sup>3</sup>.

Domestic demand is predicted to remain around 6.7 million m<sup>3</sup> per year, leaving around 13 million m<sup>3</sup> available for export by the year 2000. By 2010 export volumes may reach 22 million (Bourke, 1987).

FIGURE 1

NEW ZEALAND WOOD SUPPLY  
AND DEMAND



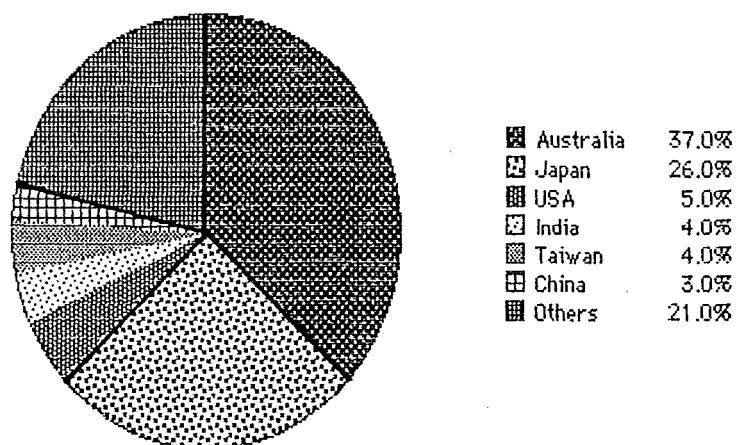
It is clear from Figure 2 that the two main importers of NZ forest products are Australia and Japan.

The Australian market, which presently takes 70% of the value of NZ's sawntimber exports, is not predicted to grow significantly as the population is expected to increase only slowly and timber substitutes will gain a share of the construction market (Bourke, 1987: Bourke, 1988). Also, much of Australia's own softwood plantations will reach maturity in the next ten years.

The Japanese market is also not predicted to grow substantially, particularly as the main competing supplier of radiata, Chile, has an increasing resource just as NZ does (Bourke, 1988). 82% of NZ's log export volume goes to Japan and 72% of this is used in packaging applications. The Japanese view of radiata as being mainly a low value timber is firmly held (Fenton, 1984) and unlikely to change rapidly.

It appears that NZ's two major markets for wood products will not be able to absorb the large quantities which will be available for export in the future and, in the case of Japan, are unwilling to accept radiata in high value uses. Therefore it is necessary to develop other markets.

**Value of NZ Exported Forest Products**  
1987



Source: MOF 1988

## 1.2 The Political Framework for Trade

Chris Butler, previously NZ's trade commissioner in Beijing, has commented that NZ has a very positive image in China and is seen as a potential supplier of many of the commodities and knowledge needed.

At government level, strong links with the Chinese were established comparatively early and most members of the top level of Chinese leadership have now visited NZ. Mr Lange's visit to China in 1986 helped to strengthen our image as a nation seriously interested in developing trade with China on a long term basis (Mortlock, 1987). The Foreign Affairs and Defence Select Committee on the NZ-China relationship found that both governments are actively seeking further links between the two countries. The committee concluded that for a variety of reasons, NZ and China have achieved a unique and mutually beneficial relationship (NZ Foreign Affairs Review, 1987).

Although China's attitudes to trade are much less political than they were prior to 1978, the decision makers are very much affected by personal friendships with those offering goods for import. Therefore the favour with which NZ is viewed is an excellent foundation which can be built upon during personal contacts. Over one hundred delegations of Chinese people now visit NZ annually (pers. comm David Dram).

The Interdepartmental Committee on China was set up in 1985 to represent all New Zealand government departments with an interest in China. The aims of the committee were "to provide a stronger supportive environment for exporters by focussing on medium and long term opportunities for New Zealand exports and by

developing strategies based on various industry sectors" (Mattock, 1987).

Although this committee did some good work in the first two years of establishment, no evidence of any recent work, in the forestry sector at least, could be found.

In 1986 the Department of Trade and Industry set up the China Unit to provide information on China's commercial environment to New Zealand's private sector.

Japan is China's biggest trading partner and is an important wood products exporter. Japan's promotion of bi-directional trade has been a big factor in this result although the recently developed trade imbalance in Japan's favour is now causing the Chinese government concern (Far Eastern Economic Review, 1987). The United States of America currently has 52% of the Chinese wood market - a result achieved through a sustained effort in market development backed up by generous assistance packages provided as incentives for increased imports from the USA. The Canadian government has given substantial aid to the Chinese forestry industry and in 1986 signed a subsidised export loan package with China to encourage further trade agreements.

The NZ government does not have the resources available to aid the export sector to the same extent as these countries but past, well placed aid expenditures have achieved much in furthering the political relationship. The report of the Foreign Affairs and Defence Committee on the enquiry into New Zealand - China Relationships (1986), recommended that funds continue to be allocated by the International Market Development Board and Tradecom for regular promotions, trade fairs and seminars in China.

These two organisations provide valuable assistance to New Zealand marketers in China.

A quote from an address by Judith Trotter, Assistant Secretary of the Ministry of Foreign Affairs in 1986, is pertinent;

"New Zealand is not, of course a major player in the region (Asia), and never will be. The corollary to that - that we have no axe to grind, and pose no threat - is not necessarily a disadvantage. It does mean though, that the initiative in developing relationships rest with us. It will be the work we do and impressions we create as New Zealanders in the bilateral contacts we have ... that will count in the end." (New Zealand Foreign Affairs Review, 1986).

### 1.3 The Trade Balance

The year ended 30 June 1988 was a record year for NZ - China trade, with both exports and imports at their highest levels ever. The balance of trade is very much in NZ's favour. While the Chinese government does not seem concerned about this situation it is clear that they would like to see a commitment by New Zealand to a more even trade balance (Foreign Affairs & Defence Committee, 1986). There is likely to be resistance to further New Zealand exports if the trade balance was to become even more onesided. China was once again NZ's fifth largest export market although wool accounted for 77% of the \$433 million earnings. Table 1 shows the value of wood product exports over the past four years.

---

TABLE 1. VALUE OF NZ WOOD PRODUCT EXPORTS TO PRC  
(\$MILLION)

	1984-85	1985-86	1986-87	1987-88
Logs	0	0	0	2.16
Sawn Timber	0	0	0	0.63
Wood Pulp	11.71	14.47	17.62	33.77
Paper and Paperboard	4.43	1.68	4.55	0

Source: NZ Dept of Statistics

---



## 2.The Chinese Distribution and Market System

## 2.1 Government Control of the Economy

The PRC has a socialist command economy controlled by the Central Committee of the Chinese Communist Party, although since Deng Xiaopeng's rise to power in 1978, economic reforms have progressively decentralised authority. Now in 1988, a socialist guidance economy is a more correct label. McGuinness, in the Australian Review, wrote that 'as long as the Chinese Communist Party stays in control and maintains its ultimate commitment to some form of socialism, pragmatism is the order of the day' (Tradecom, 1988b).

Although the reformers have control of the direction the nation takes, conservatives favouring the stringent controls of the Mao era have not disappeared. However, the consensus of Chinese and international economic observers is that reforms aimed at freeing markets from controls and opening China to the world will continue. A member of the China International Trust and Investment Corporation (China Reconstructs, 1987) has said the policy of allowing foreign investment and imports will not change. The policy is seen to 'conform to the fundamental interests of China and her people. It has been defined in the nation's constitution'.

The directives of the state are set out in annual and five yearly plans, the current Five Year plan being the seventh and covering the period 1986 to 1990.

### Pricing System

A confused, multilayered pricing system currently exists which is resulting in inconsistencies (Xu,1988). The Chinese Government have committed themselves to the urgently needed comprehensive price reform which, according to Zhao Ziyang, General Secretary of the Chinese Communist Party, will be market regulated rather than centrally controlled (China Daily,1988).

However, loosening of price controls resulted, in August 1988, in high inflation and panic buying of consumer goods. This experience has forced the government to slow the rate of reform.

## **2.2 The Wood Market**

---

The past reforms have not brought about a large free market for wood and are unlikely to do so in the next few years as it is a commodity regarded essential to economic growth. However, the prices have risen to more closely reflect demand.

Consumption of wood can be grouped into two broad categories; that under the State Plan and that outside of the plan.

### **State Plan Consumption**

There is an annual plan prepared by each city for the log requirements of state organisations and end users approved by the state. The city plans are combined into a provincial plan and provincial plans are combined into a national plan which is approved by central government for production. It is then the Ministry of Forestry's and other producers' responsibility to produce logs according to this plan. The China Timber Corporation and the Provincial Timber Corporations are responsible for the distribution of state plan wood. The price to endusers is heavily subsidised by central government; in 1988 it was approximately 60 RMB/m<sup>3</sup> - approximately US\$15/m<sup>3</sup> (Sigley, 1988).

In 1986, approximately 76 million m<sup>3</sup> of wood of an estimated total consumption of 300 million m<sup>3</sup> was consumed under the State Plan (NFPA, 1986 and Sun, 1987). Imports are included in the State Plan allocations.

### Non State Plan Consumption

Volumes produced in addition to the State Plan requirements but, theoretically, within a level allowing sustained yield may be sold on the open market. Approved endusers requiring volumes in addition to the plan allocations and non-approved users must buy on the open market at prices much higher than the state allocation prices - currently 300-400 RMB/m<sup>3</sup> (Sigley, 1988).

The Reformists who currently hold power in the Chinese government are believed to favour a gradual transition from the heavy emphasis on the State Plan allocations to more reliance on indirect controls with market forces making allocation decisions. This is because State Plan organisations are seen to be "inefficient, overstaffed, and over cossetted" (Far Eastern Economic Review, 1986)

### 2.3 Distribution of Imports

---

The central government has controlled the use and movement of foreign exchange in China and therefore controlled the importation of all commodities. Recently there have been moves to give some endusers the ability to make their own arrangements for importing (Xinhua, 1988). Given the importance attached to wood supplies for economic growth, the central government is unlikely to extend this policy to the wood market in the next few years. However, it is prudent for exporters to direct marketing efforts at both the import authority and user levels.

#### Importing Authorities

At present there are only two importing agencies for logs in China.

A. TUHSU TINGIN (The Forestry Department of the China National Native Produce and Animal Byproducts Import and Export Corporation)

Although industries in some areas and provincial governments can look for logs to import, all requests must be channelled through Tuhsu. Recent moves have given provincial branches of Tuhsu import authority whereas previously Beijing Tuhsu made all decisions (China Daily 1988e).

Many exporters of forest products have complained that there is great difficulty in establishing who is a decision maker with several organisations appearing to have responsibilities for some functions. Although decentralising import authority will probably improve the situation in the long term, in the short term confusion has increased.

Exporters have been encouraged to promote their product to endusers prior to discussions with Tuhsu instead of restricting negotiations to Tuhsu as was previously the case (Sigley, 1988)

Until April 1988 Tuhsu has had no direct contact with NZ log exporters; NZers have sold their logs through agents.

#### B. CITIC

China International Timber Investment Corporation (CITIC) purchases forest stands in one country, exports part of the harvest to other countries such as Korea and Japan, thereby earning foreign exchange, and imports the rest of the harvest into China. CITIC must sell logs imported into China through Tuhsu (Sigley, 1988). Purchases of stands have been made in several countries, including the USA (Random Lengths, 1984 and Widman Management, 1985).

Responsibility for importing woodpanels belongs to the provincial branches of China Light Industrial Products Export and Import Corporation and, to an unknown extent, Tuhsu.

The State Administration for the Inspection of Imports and Export Commodities is responsible for the inspection, certification and quality control of import commodities throughout the country (Beijing Review, 1987).

### Tariffs

Tariffs are seen to perform two functions; to protect domestic industries and conserve foreign exchange. Therefore softwood logs attract a total tariff (import duty and import tax) of only 13%, while a tariff of 50% applies to sawn timber and up to 150% applies to furniture (Bourke,1988). Appendix 2 lists the resulting total tariffs affecting various wood products.

Richardson (1986) found that tariff rates may be able to be negotiated if the China Timber Corporation can be convinced that the product will result in an overall saving of resources to the country.

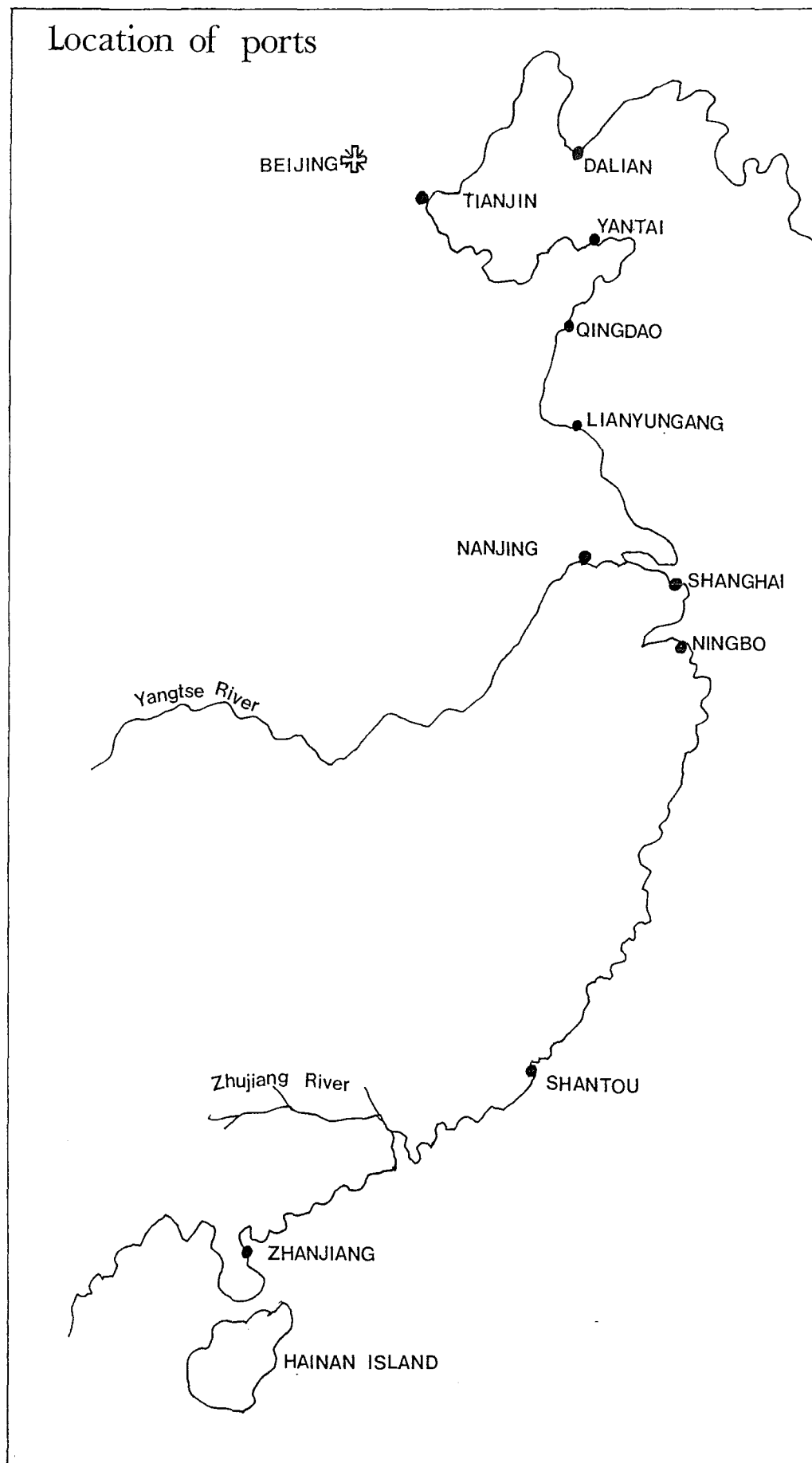
Any materials required for processing commodities in China planned to be exported are exempt from import duty. (China Daily, 1988).

### Transport

The main method of transport of wood to China is by ship although quantities of logs from the USSR enter by train. The only ports with exclusive timber berths in China are at Qinghuangdong, Qingdao, Lianyungang, Xingang, Shanghai and Huangpu. The 7th Five Year Plan provides for construction of several new timber berths at Yantai and Shijiasuo and additional berths to be added to Qingdao, Qinghuangdong, Lianyungang and Xingang. The new port on the Yangste River in Nanjing receives shipments of timber. Figure 3 shows the location of these ports and Figure 4 shows how these ports are placed in relation to the rest of China.



FIGURE 3



Previously exporters have had problems with congested ports but much effort has been put into port development and facilities now are usually adequate (pers comm Ross Cooper).

Regulations to reduce the strain on the transport system exist permitting wood shipments to move only away from forest areas. The end result of this regulation is to allow the use of imported wood only in areas without easy access to major ports. In fact the regulations are flexible - there are exchanges of logs between provinces and logs imported into Shanghai can be transhipped north for processing provided some of the production is exported (Richardson, 1986).

China has been building better transport facilities, particularly in the open coastal areas.

It is the provinces near the coast which receive and use most imported wood. These are also the areas with the greatest economic growth and the greatest spending power.

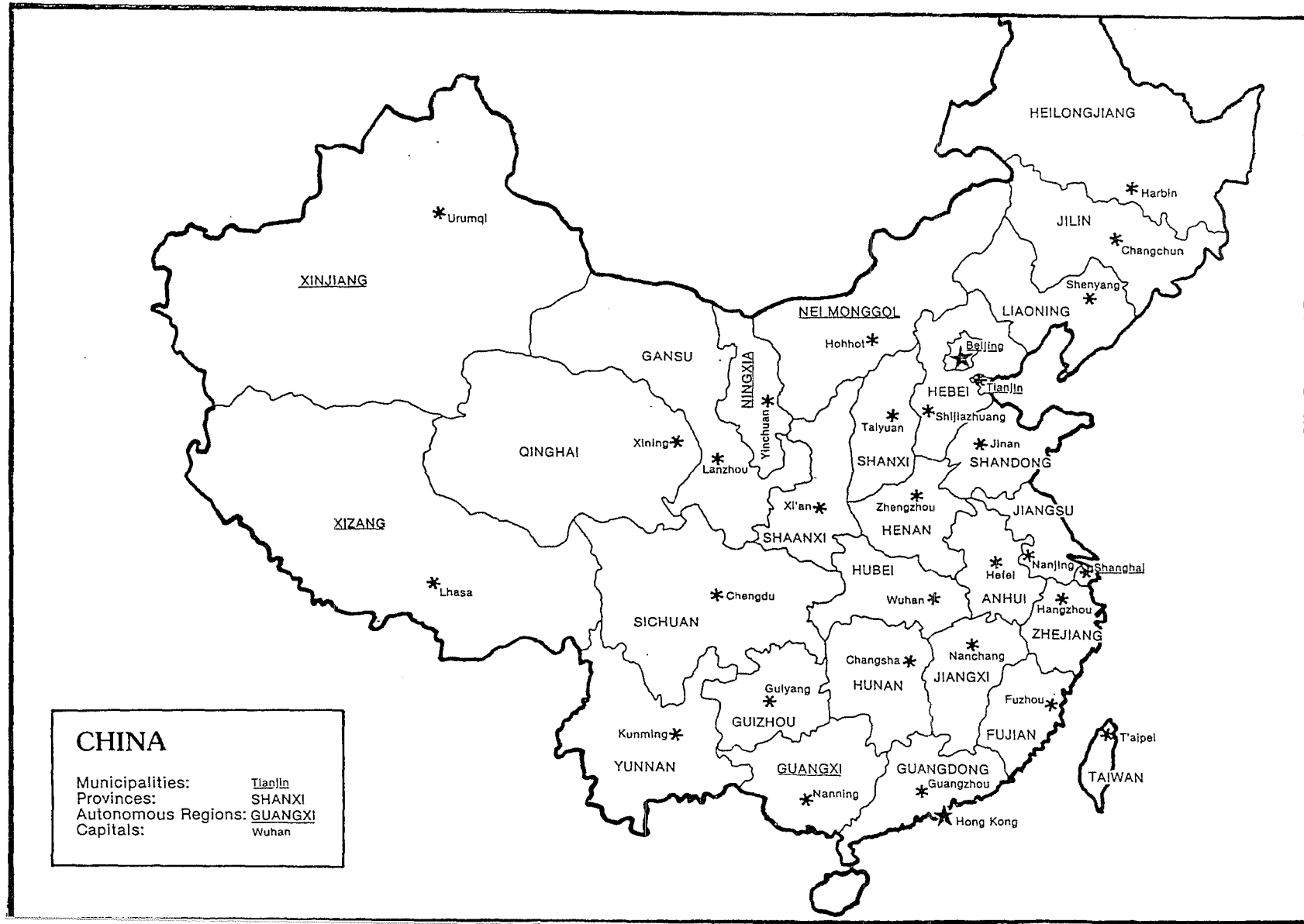


FIGURE 4

## 2.4 Methods of trade

Total quantities of wood products imported are very much limited by the availability of foreign exchange and, in the past, have fluctuated enormously. In 1984-85 uncontrolled growth in the Chinese economy led to a rapid increase in imports and a drop in foreign exchange reserves. In 1986 the government responded by introducing measures to restrict use of foreign exchange which caused a 26% reduction in total imports (Xinhua, 1987 and Bourke, 1988).

Countertrading and investment in processing plants in China to produce commodities from imported goods which can be exported or substitute for currently imported value added products, are ways exporters can protect their share of the market from governmental restrictions in foreign exchange allowances. Receiving permission for direct payments for imports is difficult. It is virtually impossible when the product can be supplied from within China or is non-essential to the growth of the Chinese economy, although fortunately forest products do not generally fall into these categories.

### 2.41 Foreign Investment in China

To the Chinese government, the main objectives of foreign investment in China, usually in the form of joint ventures, are gaining new technology and obtaining or saving foreign exchange. The difficulties of planning and maintaining joint ventures in the past have meant that most have been established in the hope of large future gains resulting from a foot in the door of the Chinese market rather than immediate profits.

Recent changes in laws relating to foreign investment and an improved infrastructure have made joint ventures much more

attractive (see Appendix 4). However there are still difficulties in determining what agencies in China are involved in decisions which may affect the venture performance and how foreign exchange earned will be remitted.

Possibilities exist for joint ventures with an existing Chinese company or even complete ownership of processing facilities in China. However NZ forest product marketing managers are taking a cautious approach.

Marketing managers are aware to some extent of the incentives being offered by the Chinese government for such projects. However many see the coordination problems and the poor quality of production as major hurdles which make avoidance of investment in Chinese processing preferable. Others are willing to look at proposals but are not actively seeking any.

#### 2.42 Intransit Processing

NZ is a relatively low cost producer of wood but a high cost processor and there is a small domestic market to absorb production surplus to export requirements, particularly lower grade

Off-shore processing prior to exporting to a third country may not only offer higher profits but allow stricter grading than applies at present and wider grade price differentials.

China, with its relatively low cost of labour and the potentially great demand for the non-exportable products and residues make it suitable for intransit processing of NZ wood products, particularly logs. An advantage of in-transit processing over more usual foreign investment is that income is generated outside China and so profit repatriation problems are minimised.

#### 2.43 Countertrade

There are many products of China which could conceivably be involved in countertrade; petroleum; textiles; clothing; footwear; food such as fungi, dried fruit, essences, oils, walnuts, pinenuts; tea; flower and shrub genestocks; bamboo; domestically produced hardwood timber and veneers such as oak, ash and paulownia. See Appendix for a list of Chinese commodities currently imported into NZ. The China Timber Import and Export Corporation has suggested that domestic hardwoods could be traded for larger quantities of foreign softwoods at a volume ratio of perhaps one to six.

Countertrade involving foreign logs has occurred with a number of countries with the greatest volumes coming from the USSR (Tian, 1988).

#### 2.44 Sale or leasing of forests

CITIC is very keen to discuss the possibility of investment in the forests of NZ by leasing forests (Sigley, 1988). In the Record of Discussion Concerning Cooperation and Exchange in the Field of Forestry between China and New Zealand (FRI, 1986b) China proposed that CITIC could negotiate a long term stumpage sale agreement. NZ companies would tender for the stand maintenance and harvesting.

### 3. The Demand/Supply Balance For Wood Products

---

### 3.1 Rising Demand

---

Despite stringent control measures, the PRC's population grew in 1987 by approximately four times NZ's total population resulting in an estimated population of 1072 million at the beginning of 1988 (NZ Herald, 1988).

Policies implemented by the state following the end of the Cultural Revolution in 1978 encouraged interactions with the world for trade and technological transfer; progressively decentralised authority; gave individuals freedom to act on their own initiative and promoted education. The result of these policies has been increasing industrialisation and productivity. The Gross Value of Industrial and Agricultural Output (GVIAO - China's equivalent of a GNP) is increasing by over 9% per annum (Tradecom, 1988).

The purchasing power of Chinese citizens has risen quite markedly, although it is still quite limited compared with some countries in Asia (Widman Management, 1985). The annual inflation adjusted income in 1986 was 260% that of 1978 for rural residents and 170% that of 1978 for urban residents. Personal income is continuing to increase, although rising inflation, variously reported at 7% (Sigley, 1988) and 11% (Thomson, 1988), is now reducing real increases per year to 1.7% for urban residents and 5.3% for rural residents (Guo, 1988). As a result of this increased spending power and inflation, the nominal value of goods bought in China increased by 23.1 per cent over the first quarter of 1988 (China Daily, 1988).

Not only is the average income increasing, but the distribution of wealth is changing. Lua Gan, the Minister of Labour, has said that "ideas and practice of egalitarianism must be discarded - distinctions must be made in payment for skilled work and for



intellectuals" (Dong and Guo, 1988). Millionaires - in US\$ terms - are not unknown. (Xinhua, 1988).

Therefore there has been an increasing derived demand for wood products as not only the pool of potential consumers increases, but also consumers have a greater ability to pay for the end products.

Figures given for consumption by end use and even total consumption vary wildly from source to source. The volumes cited here represent an amalgamation of the estimates from mainly two sources which are believed to be reasonably accurate; the 'NFPA Market for Softwood Lumber and Plywood in the PRC' produced by DBC Ass. (1986) after a nine month investigation in China and an unpublished report produced for the Forest Research Institute by a visiting Chinese forest economist (Sun, 1987).

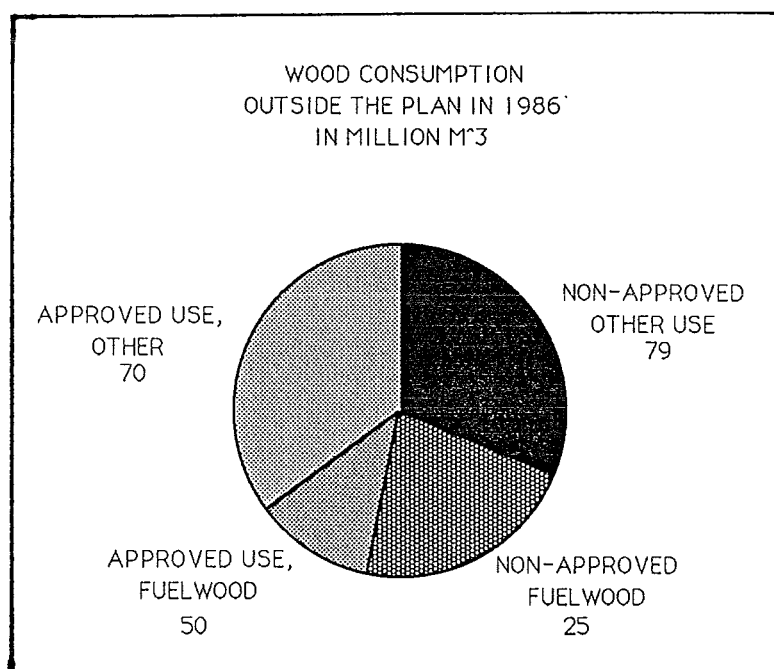
Total consumption for 1987 is estimated at 300 million m<sup>3</sup>.

### Consumption outside the Plan

As Figure 5 shows, in 1987 approved use outside the plan accounted for 120 million m<sup>3</sup>; 50 million of this was used for fuelwood and 70 million m<sup>3</sup> was used mainly for construction and furniture making in the rural areas. The remaining 104 million m<sup>3</sup> was not approved and included illegal logging and loss in forest fires and wastage. An estimated 25 million m<sup>3</sup> of this was used as fuelwood.

Consumption outside the plan is a function of rural population growth and represents the minimum requirement of the 800 million rural people (Johnstone, Trewin, Chapman, 1985). Consumption would be much higher if more wood was available.

Figure 7 (Page 40) shows the projected increase in demand for wood outside the plan to the year 2000. The 1987 per capita consumption of 0.28 m<sup>3</sup> is used until 1995 with a population growth rate of 1.5%. It is optimistically assumed that wastage and losses due to forest fires and diseases will be reduced by 30 million m<sup>3</sup>/annum by 1995 giving a per capita demand of 0.2425 m<sup>3</sup> from then on. The estimated non-State Plan consumption is 232 million m<sup>3</sup> in 2000.



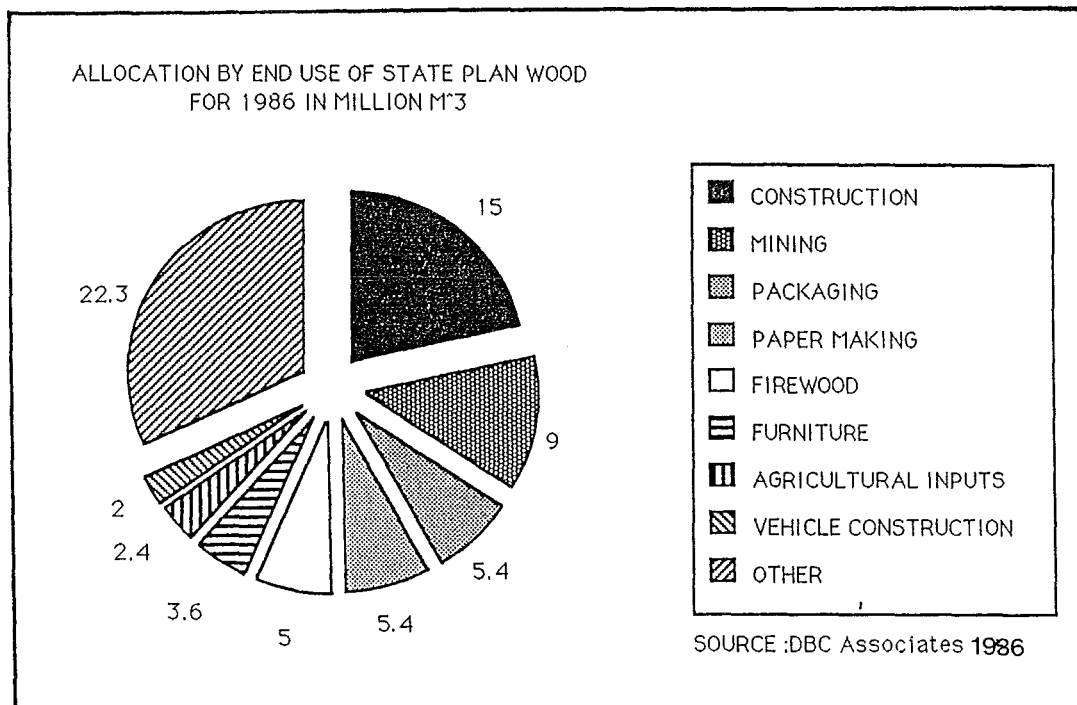
Source: DBC Assoc. 1986

#### Consumption inside the Plan

China's planners have found that when planned wood supplies drops below 0.08 million m<sup>3</sup> per billion RMB (the local currency) of GVAIO as they have done in the 1980's, state plan users buy wood from the unplanned sector and the unplanned sector illegally overcuts areas to make up the shortage. Therefore the planners have determined that the minimum level of roundwood consumption necessary to support state planned economic development is 0.08 million m<sup>3</sup> per billion RMB of GVAIO. 1986 State Plan consumption of 76 million m<sup>3</sup>, which included 10 million m<sup>3</sup> of imports (roundwood equivalent), gives a ratio of only 0.048 million m<sup>3</sup> to 1 billion RMB of GVAIO.

Statistics on enduse are only kept for consumption uses under the State Plan. However, as imports are only allocated under the State Plan, it is in this consumption that NZ Importers have the most interest. The estimated proportions allocated to each enduse are shown in Figure 6.

FIGURE 6



Some of the components of this consumption and their potential for increase are evaluated below.

### 3.11 Construction

90% of China's town and city residents depend on the government for housing (Xinhua, 1988e), while in rural areas almost all houses are owned by individual families. Construction of housing, hotels and factories has been increasing to meet enormous demand (Bezai Uikuri, 1983).

Although the government has been building 130 million square metres of urban housing each year for the past seven or eight years, a quarter of urban families still live in crowded conditions. The government has set a target of providing each urban family with an apartment before the year 2000. This will require an average of 12 to 13 square metres of living space per person in 2000. At present, the average is less than 10 m<sup>2</sup> (Xinhua, 1988e).

Assuming a population of 200 million in the cities, with a growth rate of 1.2% (Shulin, 1988), and a ratio of wood usage of 0.02 m<sup>3</sup> to a m<sup>2</sup> of construction space (Westman, 1986), this urban residential construction will require approximately 1.6 million m<sup>3</sup> of wood per year until 2000.

In Beijing alone 25 million m<sup>2</sup> of construction took place in 1987, only 5 million m<sup>2</sup> of this being residential (China Daily, 1988b). It is obvious then that the nationwide scale of total urban construction is enormous.

In urban areas, wood is used to relieve cramped housing conditions by filling in balconies. Such do-it-yourself adaptations are illegal but widely tolerated and are more easily completed with wood than with steel or concrete.

New housing is a top priority amongst rural people when it comes to spending their new wealth although most of the wood requirement is obtained outside the State Plan. Annual rural home starts are expected to number 9 to 10 million for the next few years. One estimate of the amount of wood used in the average rural house is  $0.5\text{m}^3$  of sawn timber and  $3.5\text{m}^3$  of roundwood (FRI, 1986). Using this estimate and the officially cited 70% sawn timber conversion rate, approximately 41.7 million  $\text{m}^3$  of roundwood is required for new rural housing each year, 6.7 million of which must be converted to sawnwood. Another estimate of rural home wood usage was  $0.15\text{m}^3$  per  $\text{m}^2$  (Westman, 1986). As the average rural house size is  $100\text{m}^2$ , this would make the wood requirements  $15\text{m}^3/\text{house}$ . This is four times the previous estimate.

The Chinese would generally prefer greater use of wood in residential buildings (NFPA, 1986). Wooden doors are preferred to metal and wooden floors are something of a status symbol.

### 3.12 Mining

Production of coal in 1987 was 920 million tonnes which required an estimated 8 million  $\text{m}^3$  of wood as pit props. At present, only 20% of the timber used in mining is preservative treated; increased treatment could decrease the quantity of wood required as individual pieces last longer. However, equally, the preservative treatment could make wood a more economically efficient material than its substitutes, steel and concrete filled bamboo, which are considered functionally inferior (DBC Associates, 1986).

### 3.13 Fuelwood

Firewood accounts for 80 million m<sup>3</sup> of China's roundwood production per year, much of which is illegally logged. In spite of this consumption, 64% of rural people experience fuel shortages (DBC Associates, 1986). Nuclear energy is expected to become one of the major power sources for supplying heat to urban citizens particularly in the north and may reduce the demand for fuelwood in the future.

### 3.14 Packaging

The standard of packaging, especially for exports is causing concern as losses resulting from poor materials and practises each year have been estimated at approximately 14 billion yuan (US\$3.8 billion) according to Richardson (1986). The Seventh Year Plan (covering the period 1986 to 1990) has given particular attention to the improvement of packaging and so the amount of roundwood, plywood and paper products used for this purpose, which in 1985 was 7.7 million m<sup>3</sup> of roundwood and 160000m<sup>3</sup> of plywood, can be expected to increase.

### 3.15 Furniture

3.6 million m<sup>3</sup> of wood under the State Plan is used in furniture manufacturing although use in non-state production has been estimated at five to ten times this figure (DBC Associates, 1986). The new homes and apartments required to house China's growing population will require furniture; thus demand will remain high. In addition, the government sees the furniture industry as being suitable for development into a large scale export industry.



Wood products are a major input. There is concern that the rapidly expanding furniture production will deplete domestic wood supplies (Westman, 1986).

### 3.16 Transport

Transport accounts for 5% of roundwood allocated under the State Plan. The railway system in particular has been invested in heavily in an effort to improve China's infrastructure. Although new tracks have mainly concrete sleepers and freight cars are predominantly steel; bridges, some stations, crossing sleepers, maintenance of wooden sleepered tracks and parts of freight cars require wood to increase to 1.5 million m<sup>3</sup> by 1990 (DBC Associates, 1986 and Widman Management, 1985).

### 3.2 THE DOMESTIC SUPPLY

In 1984, Hubei province submitted to the central planning authority forest area claims 66% higher than the actual areas in existence. This led to the comment by the first Minister of Forestry - "As everyone knows, our afforestation statistics are not really based on actual measurements, but are fixed on a basis of guesswork. Consequently, there are mistakes, overestimates and even totally unfounded reports". Therefore the present annual increment of production timber forest cannot be definitively stated but is thought to be of the order of 180 million m<sup>3</sup> each year (DBC Associates, 1986).

Annual total roundwood production is believed to be 300 million m<sup>3</sup> (Sun, 1987) although there is a wide range of estimates. This is not expected to increase in the next twenty years for the following reasons;

#### A. Destruction of forests.

The official decrease in forested area each year is 1.4 million hectares. This is due to overcutting, which occurs despite regulations designed to prevent it (Xinhua, 1988f), and natural disasters such as fires and disease (Xinhua, 1988d).

It is estimated that the non-plantation production forests will be cut out within 20 years if the present level of overcutting is maintained. The distribution of the timber resource is unbalanced, with over mature, mature and close to mature stands accounting for 77% of the resource (Shiraishi, 1985).

### B. Failure of the 1950-1960 plantations

Even very recently it has been assumed by some researchers that the mass afforestation schemes of the 1950s and 1960s would provide sufficient wood to supply China's demand and allow it to become a significant exporter by the year 2000. (Zhu, James and Hanover, 1987). However a high percentage of the areas planted failed. A paper by the Policy Research Office of the MOF, states that of all China's plantings since 1949 no more than one third managed to survive due to a lack of care after planting, illegal firewood collection and inadequate species selection. Sun (1987) has suggested that the survival percentage is as low as 20%. The standing volume of the manmade forest is estimated at only 2% of the national resource (Shiraishi, 1985).

### C. Insufficient incentives and finance for the forestry industry

To push roads into the inaccessible areas which account for 60% of the production forest areas (FAS, 1986), establish more plantations and tend them, the Chinese Ministry of Forestry has estimated that it requires three times the current funds it receives. A former Minister of Forestry has claimed that with high taxes, forestry is actually suffering from disinvestment.

Only 15% of planned afforestation is undertaken by the state. The remaining 85% is left to private tree farmers. Recent forestry reforms have improved the incentives that affect afforestation but illegal taxes are levied by local authorities in some areas, leaving the tree farmer virtually no economic incentive to continue maintenance. Because property rights have been suspended several times since 1948, some tree farmers, unsure of the future, overcut to maximise present returns.

Some recent afforestation has however been very successful and these forests should contribute significantly to China's supply upon maturity. Much of the highly publicised successes in afforestation have been on degraded land with low potential productivity. While trees are now growing in these areas, the timber they will eventually provide will be used to satisfy the enormous unmet demand for fuelwood and other uses outside the State Plan.

### 3.3 The Domestic Deficit

China's planners have determined that in order to save the forests, State Plan wood consumption must be 70% of the level calculated necessary to support economic growth - 0.056 million m<sup>3</sup> per billion RMB of GVAIO (DBC Associates, 1986) which is higher than the current level.

To achieve this level without State organisations finding it necessary to buy wood on the open market, the government has placed controls on wood use and distribution in almost all timber using industries. The Regulations for Economical and Rational Applications of Wood and Wood Substitutes of 1983 discourage the use of wood in trusses, floors, walls, windowsills, most rail sleepers, decks of ships, mining props and firewood and many other applications. Any organisation wanting to use wood in any of these applications must apply for permission from the State Economic Commission, provincial governments or municipal governments.

The state expects these regulations to save 13 million m<sup>3</sup> of wood per annum over the 7th Five Year Plan (1986-1990) and 16 million m<sup>3</sup> per annum by 2000 (DBC Associates, 1986).

These regulations are difficult to enforce and, within powerful organisations and in rural areas, are widely disregarded. Although the promotion of substitute building materials has had success in the past, the higher prices and scarcity of some substitutes, especially steel (Chen, 1988), will decrease the effectiveness of the regulations in the future (FAS, 1986). For instance, production of alloy doors and windows has been cut to save the low supplies of aluminium (Tian, 1988). Also, although the Ministry of Forestry is encouraging the use of coal and gas, the Coal

Ministry is encouraging the use of fuelwood to conserve coal resources.

Because the rate of substitution required has not been achieved, the effect of the restricted State Plan allocation has been to increase demand outside the State Plan and increase levels of illegal overcutting.

Even with the low ratio of wood use to economic growth planned, future State Plan wood requirements will have to grow substantially. Figure 7 shows the combination of the predicted State Plan requirements, assuming a ratio of 0.056 million m<sup>3</sup> of wood to a billion RMB of GVIAO and a 9% annual increase in GVIAO and the predictions of non-state requirements given in Figure 9. It should be remembered that the non-State Plan consumption was calculated with the assumption of constant per capita requirements. Clearly this is an optimistic assumption given that the State Plan allocation is much less than the actual requirements of industry - which is therefore compelled to buy extra volumes on the open market.

The current domestic production is maintained at the present level - an optimistic assumption for the next 20 years. After this, advances made in plantation forestry are expected to increase domestic production, helping to reduce the deficit, but not meeting increasing demand in the next 50 years.

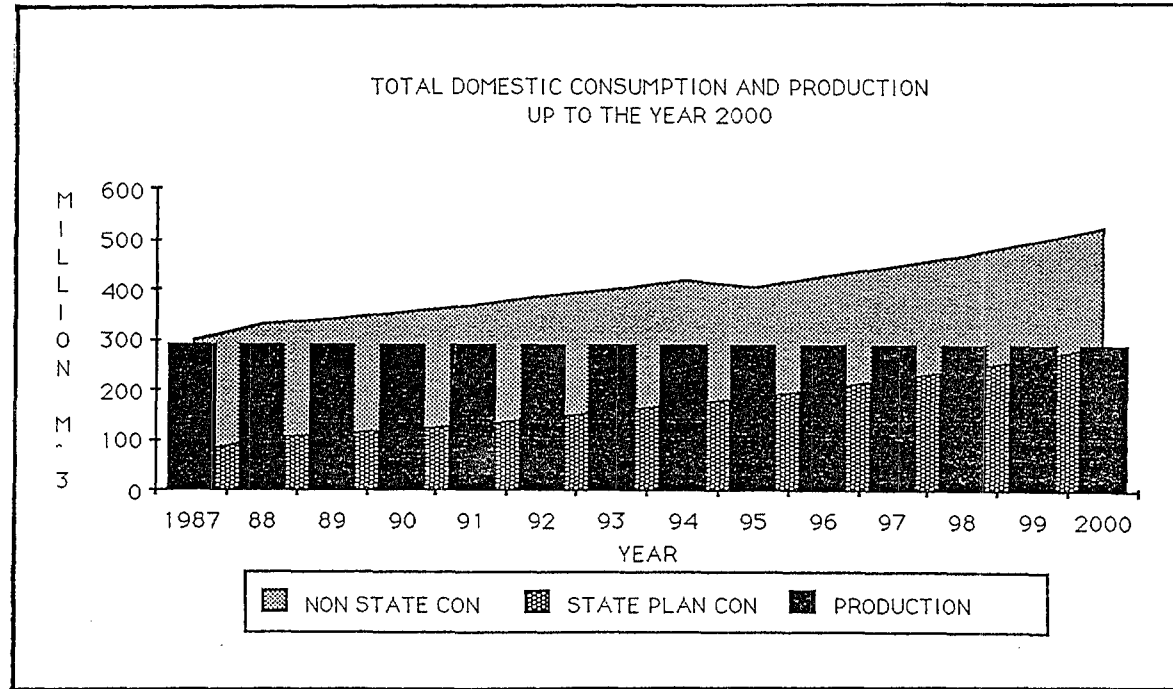


FIGURE 7

China's planners believe that at least 13% of planned consumption will consist of imports in 2000 (NFPA, 1986). This would result in an increase of imports from the present 10 million m<sup>3</sup> to 39 million m<sup>3</sup>.

The predicted change from a State Plan System to a more market controlled system, discussed in Section 3.2, should not affect overall consumption of wood. Future levels of imports will be limited mainly by political decisions. If China's per capita consumption of industrial wood is to reach the 1985 level of South Korea in 2000, the nation would have to import over 200 million m<sup>3</sup> with the optimistic assumption of maintenance of domestic production.



#### 4. The Demand/Supply Balance for Individual Wood Products and the Potential for NZ Exports

---

#### **4.1 Logs**

---

##### **Potential for growth in demand and domestic supply**

Section 3 showed that the PRC's consumption of logs is currently constrained by supply and this situation is likely to continue for the next 50 years.

Little production is from plantations but increasingly secondary forest first logged in the 1940s and 50s contributes to the harvest. Therefore there is a trend towards reduced logsize and an increasing scarcity of top grade logs.

Preferred domestic logs from northern areas are Korean pine, Yeddo Spruce, and Chinese Larch which is used for construction and furniture and Japanese Ash which is used for furniture and plywood veneer. The most common softwood species in southern China are Masson's Pine and Chinese Fir. Chinese Fir is the most popular softwood, admired for its resistance to decay and insects and because it does not warp.

Since 1985 prices of timber have doubled or tripled in different areas of China (Wu, 1988).

## Potential for growth in NZ imports

### Demand for Log Imports

China's demand on the international market is expected to be mainly for logs and the technology to convert them rather than processed forest products. This preference for logs reflects Chinese policy to use their own labour force to add value and therefore save foreign exchange. The contrast between low levels of duty on logs and high rates on finished lumber underlies the importance China attaches to unprocessed imports.

The centralised purchasing system favours logs, rather than the large number of sawnwood sizes, grades and specifications which would be needed to satisfy customers throughout China. Also, logs are more easily stored and handled than lumber - an important consideration as there is a shortage of covered storage at ports.

Therefore, a large proportion of the wood imports required by China are expected to be demanded in the form of logs.

China is not now a low price, low quality market for log imports. Chinese buyers have paid higher prices for some imported logs than the Japanese were willing to offer (pers.comm R. Cooper).

Figure 8 shows that most imported logs are converted into sawn timber.

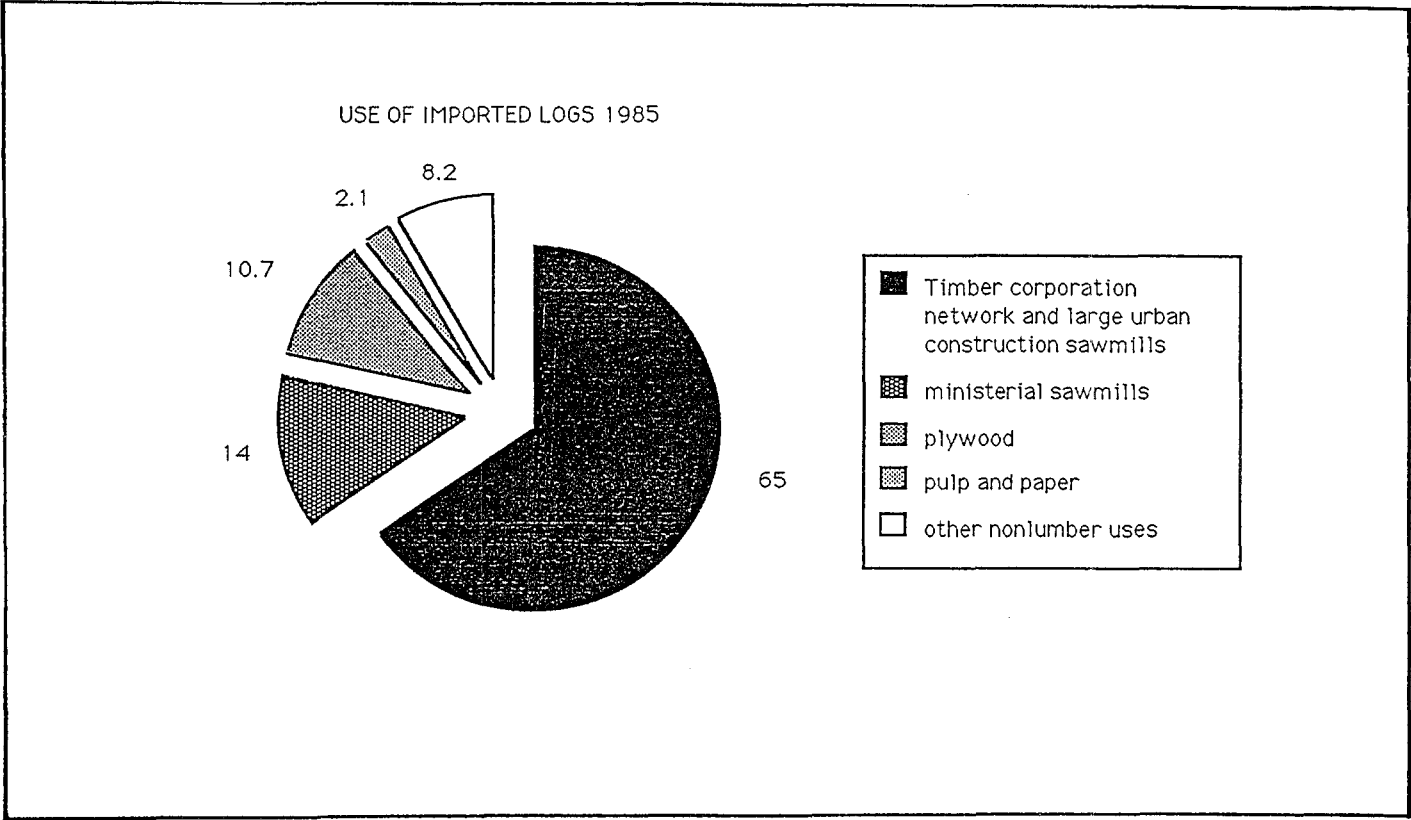


FIGURE 8

Imports of logs grew from 0.5 million m<sup>3</sup> in 1979 to 9.33 million m<sup>3</sup> in 1985. Total imports of logs now total between 7 and 8 million m<sup>3</sup>. Tushu is receiving numerous enquiries from endusers requiring extra volumes and if foreign exchange was available, Tuhsu feels that it could probably import another 2 million m<sup>3</sup> year (Sigley, 1988).

In 1986 a draft strategy for the NZ - China Relationship in Forestry (FRI, 1986) predicted roundwood imports would be 12 million m<sup>3</sup> in 1990, 14 to 15 million m<sup>3</sup> in 1995 and 16 million in 2000. Given China's increasing level of exports and hence, foreign exchange, and the projected increase in living standards, it is felt that these quantities are very conservative in the later years.

The difficulty in estimating future import levels is illustrated by a study by Flora and Vlosky (1986). In it, the assumptions used to predict demands for construction grade logs were that GNP would rise by 6% per year and China would allocate a constant fraction of its spending on imports to softwood logs. The 1983 allocation figure of 1.3% was used.

In 1984, the percentage of import spending on softwood logs was 2% (Flora, 1986) and growth in GNP has been 9% for several years and shows no sign of slowing. Thus, with hindsight, it can be seen that the prediction of Flora and Vlosky was based on faulty assumptions.

Flora (1986), in a different prediction used the 1984 percentage allocation figure of 2% and GNP growth of 6% to predict that softwood small log (15cm < small end diameter < 30cm) imports would increase to 4.8 million m<sup>3</sup> in 1990 and 6.3 million m<sup>3</sup> in 1995. Given the higher actual growth in GNP, this prediction must also be questioned.

### Competitors

Figure 9 shows the volumes supplied by country of origin in 1986.

#### CHILE

The Chileans are targeting their product in a similar way to NZ, with the higher end of the market being catered for with big logs of plywood manufacturing quality (pers. comm. R. Cooper). Most of the imported logs are used in packaging and pulp however.

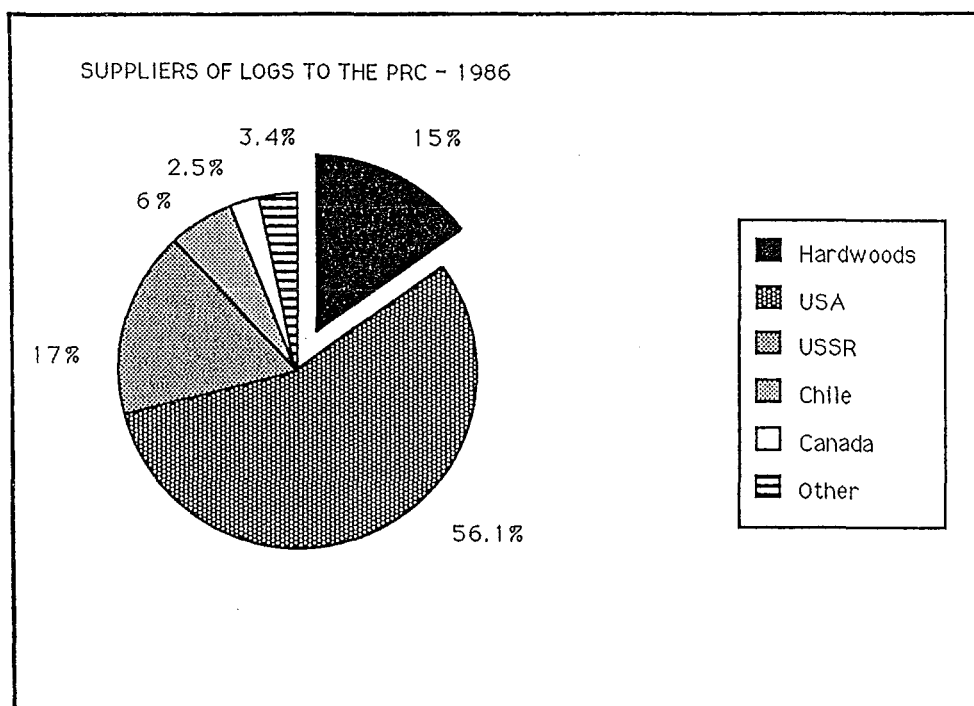
Chile is currently supplying approximately 800 000 m<sup>3</sup> of China's softwood log imports of which 100 000 m<sup>3</sup> comes from Fletcher Challenge owned forests. It has one million hectares of plantations and estimates a sustainable yield by the end of the century of 40 million m<sup>3</sup> per annum. The country has an abundant land and labour but lacks the capital to install processing capacity.

Chile intends major investments in processing facilities, amounting to almost NZ \$8 billion. The majority of funds for this will have to come from overseas. If the funds are not forthcoming, as is quite possible given Chile's present debts and perceived instability, Chile will be an enormous force in future small log trade (Flora, 1986). Chile appears willing to make increased use of counter trade.

#### CANADA

In the coastal zone of British Columbia, timber harvest has been heavy relative to reforestation. A significant fraction of the remaining forest is of small trees which would compete with NZ's radiata resource. There is industrial pressure on the provincial government to allow more log exports from British Columbia - particularly those which would be subeconomic in domestic

FIGURE 9



## USA

In the USA too, the share of small roundwood in log exports is growing. Timber harvests are expected to decline through the rest of the century from the Pacific coast of the US outside Alaska. However Flora (1986) believes an increasing share of this harvest will be exported - due to the large supply of timber in the southern states, rising domestic transport costs and the flow of Canadian lumber into the US. High production costs prevents logs from Alaska entering the Chinese market but this may change in the future. A large proportion of US logs are Douglas Fir which the Chinese are familiar with and favour.

## USSR

The USSR has exported logs into China in sizes and grades that compete directly with radiata pine. The USSR has signed a contract to increase exports of softwood roundwood to China from nearly 2 million m<sup>3</sup> in 1985 to 10 million m<sup>3</sup> a year by 1991. This wood is to be purchased through barter trade of unspecified commodities. There is now doubt among Chinese officials that the USSR will be able to fulfill the contract. An inadequate infrastructure and a lack of skilled workers has resulted in even 1986's contract amount of 2.2 million m<sup>3</sup> not being met.

However the timber now available for exploitation as a result of a new 3200km railway is likely to move mainly into China. DBC Associates (1986) found that China's wood users were not happy at the prospect of increased supplies of low quality larch.



SE ASIA Both Indonesia and the Phillipines have recently banned the export of logs (New Scientist, 1987). Because the chinese do not appear to differentiate between hardwoods and softwoods in most enduses, the decreased supply of SE Asian logs may allow increased market share for suppliers of softwood.

#### Current Market Status for NZ

When the NZ Forest Service began exporting logs to mainland China in the mid 1970s, NZ became one of the first countries to do so. This was possible because of the Government's comparatively early recognition of the PRC as a nation and because of an increased domestic supply. Until 1981, one vessel continuously carried logs from NZ to China and returned.

As the total level of logs available for export became constrained, NZ ceased exporting to China regularly although opportunities remained (pers. comm. R. Cooper). Therefore in the past China has been a useful market to absorb quantities of lower quality products when supply has exceeded the demand of more traditional markets. When NZ supply has decreased, the Chinese market has been one of the first to be abandoned, largely because of the relatively low prices achieved in the market.

Now, faced with increasing quantities of logs which local industry is unable to purchase at competitive rates, NZ forestry companies are again exporting to China. The attitude appears to be different, however. China is now seen as a potentially large market requiring a long term commitment.

The Market Development Board study of unreconstituted wood producers undertaken by the Trade, Marketing in Economics Group of the Forest Research Institute in 1988, found that only the three major companies; Fletcher Challenge, Carter Holt Harvey and Elders NZFP, had any interest in exporting logs to China (pers. comm. J. Bourke) probably because of the market development costs and the large scale of operations required.

The three major companies have joined forces in the development of a market for NZ radiata pine logs.

comm. J. Bourke), probably because of the market development costs and the large scale of operations required.

The three major companies have joined forces in the development of a market for NZ radiata pine logs.

#### Attitudes to Radiata Logs

In discussions with Tuhsu, the log importing authority, a NZ delegation in April 1988 was told that users had found radiata to be soft and weak and only suitable for packaging materials. They felt that it was difficult to sell, particularly because of the small diameter of logs. One Tuhsu official told the delegation that the price of radiata logs would have to be US \$20/ m<sup>3</sup> less than the price of Douglas fir to encourage users to try it. This would make the price about US\$95m<sup>3</sup> delivered to China.

In subsequent conversations with endusers the delegation found that some supported Tuhsu's comments. Based on Chilean supplies they felt that radiata logs were of poor form and the resulting sawn timber was of low strength and not suitable for construction. Some users however expressed interest in obtaining radiata for furniture and plywood manufacture and roof trusses as well as for packaging.

Some endusers made the comment that very little effort had been made by suppliers to educate endusers in the properties of radiata and the technology of processing and treating it.

Radiata logs have been sent to a Chinese plywood mill. The millers were very surprised at the proportion of clearwood in the logs, were impressed with the product and were keen to establish long term contracts.

### **Possible Investment in China**

In the 'Record of Discussion Concerning Co-operation and Exchange in the Field of Forestry Between China and New Zealand' (FRI, 1986) China proposed that one of the sawmills in the south east coastal area process NZ radiata logs. It was suggested that NZ would send the logs to the mill and pay China a processing fee. Chinese workers would be trained in the processing methods suitable for radiata. Some of the product would be exported and some sold on the local market. An initial volume of 20 000m<sup>3</sup>/year was suggested. A feasibility study of this proposal was to be undertaken by NZ but there is no record of the result.

## **4.2 Sawnwood**

---

### **potential for increased domestic demand**

The main uses for softwood sawn timber are for doors, windows and concrete forming (Richardson, 1986). Therefore the amount of wood used in each construction unit is small, but given the enormous numbers of houses and apartment blocks being built, total consumption of sawnwood is high.

Wooden joinery is generally made from knotty timber which warps and rots. Architects have usually specified metal joinery because it is longer lasting and has been cheaper. Now, with suitable metals becoming scarce and expensive, there is much potential for joinery made from treated, straight grained wood.

For concrete forming it is expected that panel products will take an increasing share of the market owing to their greater efficiency in use. In the packaging industry also, plywood, reconstituted boards and planks are expected to be more widely used.

Despite this substitution, the absolute amount of sawnwood demanded is predicted to increase due to increasing incomes and population. Demand for wooden flooring in particular is expected to increase.

### **potential for increased domestic supply**

The ownership of sawmills is spread across a number of Ministries and organisations. The relatively few large sawmills are operated by MDF and the Timber Corporations. The majority of sawmills are small, most being run by construction teams and factories that choose to cut their own lumber rather than buy it from the timber corporations.

Because of this fragmented ownership pattern, statistics on sawn timber production are very difficult to obtain. Production under the State Plan, (from MDF, other ministry and Timber Corporation mills) was estimated at 16.3 million m<sup>3</sup> with a reported 70% conversion rate in 1986 although the capacity was 25 million<sup>3</sup>. This difference between actual production and possible production is mainly because although mills are permitted to request species and quantities from the timber corporations or Ministerial Material Supply Bureau, they must cut what they receive - and usually they do not receive the amounts they request. The Ministry of Forestry estimates that another 5 million m<sup>3</sup> is probably sawn outside the State Plan although this figure seems very conservative.

The 1990 State plan target is 18 million m<sup>3</sup> of sawn timber from domestic logs. Little investment in updating or new mill construction is planned and so the national capacity, currently 25 million m<sup>3</sup> of sawn timber per year, is not expected to exceed 30 million m<sup>3</sup> in 2000.

Separate statistics for hardwood and softwood lumber are not kept and estimates from different sources vary greatly. (DBC Associates, 1986 - 80% of all lumber cut is softwood; FAS, 1986 - softwood lumber accounts for 30-40% of total lumber; Widman

1985 - 70% of sawnwood is softwood). As the Chinese do not appear to differentiate greatly between enduses for most hardwoods and softwoods the lack of consistency is of little importance.

Processors cut to the specifications of particular purchasers. The most common products in China are thick softwood lumber; DBC Associates (1986) estimates thick lumber accounts for 55% of all lumber production. Large sizes permit the purchaser to remanufacture the boards into the smaller sizes they need for particular applications.

The limited facilities for kiln drying and treating lumber mean that much wood deteriorates within the first few years of use. Most wood in the humid climate of S.China has a life span of 3-7 years. Wood preservation is used only for rail sleepers and some utility poles. One reason for the lack of development of treatment plants and kilns is that the operations consume a great deal of energy which is in short supply. The higher cost of dried, treated wood, 30% more than green lumber (DBC Ass, 1986 ), is said to discourage buyers, despite the long term advantages of the product.

### **potential for increased NZ exports**

China's need to import sawn timber has been predicted to increase dramatically between now and 2000 by two studies (Richardson, 1986 and DBC Associates, 1986) because sawmills will be unable to process the quantities required.

The justification for this is as follows.

\*Planned increases in the State Plan indicate that the level of conversion of roundwood production will be maintained at 26%.

\*65% of imported logs are currently converted to sawn timber and this proportion is assumed to be maintained.

\*If domestic state plan log production is 142 million m<sup>3</sup> and the imported log volume is 20 million m<sup>3</sup> in 2000, this gives a total output required from domestic sawmills of 35 million m<sup>3</sup> using the official 70% conversion rate from logs to sawn timber.

\* This required output is 5 million m<sup>3</sup> more than that expected in 2000, assuming that 100% use of mill capacity is achieved.

\*This shortfall in output is expected to be heightened by the fact that the coastal mills will be unable to process the extra volumes of imports. Inadequate transport facilities will make the transport of imported logs to mills in the forested provinces for processing and the transport of the processed product back to the coastal regions where demand is high uneconomic.

Approximately 70 large sawmills, each processing 100 000 m<sup>3</sup> of logs, will be required to process the additional 5 million m<sup>3</sup> of sawn timber needed in 2000. Certainly, foreign investment will result in a proportion of these mills being built; the State planning system is sufficiently flexible to increase its commitment to sawmill construction if the need exists, and the substitution in

some end uses by panel products will decrease the proportion of logs converted to sawn timber.

However given the conservative nature of the predicted level of imported logs used in these calculations and the optimistic assumption that mills will produce to 100% capacity, it is obvious that there will be a substantial market for imported sawn timber by 2000. DBC Associates (1986) have estimated, apparently arbitrarily, that the volume required to be imported in 2000 will be 2.8 million m<sup>3</sup> of sawn timber.

#### Competitors

Canada is the largest supplier of softwood- supplying 250 000m<sup>3</sup> of the 300 000<sup>3</sup> in 1986, most of which was Western Hemlock. The USA supplied the majority of the balance, exporting primarily Douglas fir.

The two major suppliers of hardwood sawn timber are Canada and Hong Kong which reexports tropical hardwoods.

Although at present N. American spp are preferred, the main criterion of Chinese importers is price and the tropical hardwoods and P.rad provide cheaper alternatives.

The USA producers appear intent on capturing a large proportion of the sawn timber market. However, as structural uses for wood are



prohibited, Douglas Fir does not seem to be particularly suitable for Chinese requirements. With its tendency to splinter and inability to produce a good finish, it is surprising that the Chinese favour it.

A difficulty with sawn timber imports is the lack of standardisation across China. Both the USA and Canada are attempting to help China achieve more standardisation, introducing a system compatible with their own production at the same time. Because of NZ's small size and influence, NZ exporters will have to adapt their production to whatever system is adopted.

#### Investment Opportunity

A joint venture in the production of laminated products was proposed by China following a visit to NZ of the Chinese Technical Forestry Mission in 1986 (FRI, 1986b). The Mission felt a market could be developed for laminated products, which are not produced in China. They suggested that New Zealand could supply the management and technical skills to a joint venture to process NZ radiata pine and local species in China, the products of which could be sold on the domestic and international market.

A feasibility study was to have been made of this proposal but there is no record of any progress.

### **4.3 Paper and Paperboard**

---

#### **potential for increased demand**

China's annual per capita consumption of paper and paperboard was 10kg in 1987 (China Daily, 1987). Despite the approximations involved in the derivation of this figure, it is clear that this level is well below the world average of 39.5 kg/person (FAO, 1986) and is much less than NZ's consumption of 159 kg in 1986 (MOF, 1988).

Already demand is much in excess of supply (Tradecom, 1987). Given China's above average rate of growth in GNP, increasing population and commitment to education and industrialisation, demand will increase at a much greater rate than for developed countries. Almost a quarter of the population are illiterate or semiliterate but literacy programmes are fast decreasing this (China Reconstructs, 1988).

Demand for business paper will increase in line with the 30% increase in computer installations each year and increased production requires more packaging papers. With increased discretionary incomes, people have more to spend on hobbies. Calligraphy and other artwork is popular and the demand for high quality art paper is large and increasing. Also with discretionary income increasing, demand for products such as toilet tissues, paper towels and wood fluff products will increase (Zhong, 1985).

### **potential for increased domestic supply**

China produces about 10 million tonnes of paper and paperboard a year. (Xinhua,1988). Of this, only 1 million tonnes are produced from wood (requiring 5.4 million m<sup>3</sup> of wood per year); the remainder is from agricultural residues. This extensive use of agricultural residues results in excessive nutrient removal from arable land and papers of generally poor quality.

In order to meet the state's target GNP by 2000, studies of industrial needs have shown that paper and paperboard production in the year 2000 must be between 15.6 and 25.6 million tonnes. It has been acknowledged that even the lower production figure will require much investment to achieve (Zhong, 1985). Although foreign aid and investment is being sought and found to help with this goal, it is unlikely to be achieved without substantial imports of pulp.

### **potential for increased NZ exports**

The director of the planning department of the Paper Industry Bureau has said "as the prices of pulp and paper rise on the international market, we cannot afford to import large amounts every year. We will have to develop our own paper industry and try to stop imports in the future" (China Daily, 1987). However, even if the plan of expansion of the domestic production of paper and paperboard by the year 2000 is achieved, the country needs, and will continue to need, imports to meet demand. It is calculated that if China is to achieve the world average per capita consumption of 1986, assuming that domestic production can increase to 20 million tonnes, approximately 28 million tonnes of paper will need to be imported in 2000.

In 1986, only 670 000 tonnes of paper was imported. (Sigang, 1987).

In 1987, 30-40% of China's paper and paperboard imports were from Japan. The PRC is one of Japan's most important markets for paper and paperboard and Japanese exporters have set up branch offices within China in anticipation of future expansion in trade.

In the future, Japan is expected to be the strongest supplier, particularly of high grade coated board and paper, while American and European suppliers will compete in the sector of containerboards.

## Newsprint

Potential for Growth in Demand The per capita consumption of newsprint in the world in 1986 was 6kg and more than 20kg in developed countries. However it is only 0.48 kg in China (Wu 1988). This consumption level is constrained by supply; current per capita demand is estimated at 0.60 kg or just over 600 000 tonnes in total. Whereas newspaper circulations have reached saturation point in many developed countries, the increasing literacy of China's population indicates the Chinese market has excellent prospects for growth. It is estimated that if, by the year 2000, every Chinese household, with four members on average, subscribed to one daily newspaper, the country would need 1.6 million tonnes of newsprint a year. (Wu, 1988).

Newsprint is required to be of good quality because it is used not only for newspapers but also books, and is required to be deinked and recycled (pers. comm. David New ).

Potential for Growth in Domestic Supply Domestic production capacity is only 450 000 tonnes and mills are not even producing this because of the shortage of timber which is required at a ratio of 3m<sup>3</sup> to 1 tonne of newsprint. Some paper mills have had to cease production and others, facing increasing timber prices, are barely breaking even.

Some of the production must be sold at the state price (US \$418/tonne in June 1988), while the remainder can be sold on the open market at prices which have exceeded US \$675/tonne. (Wu, 1988).

1987-88 production was 28% down on 1986-87 production and some newspapers have had to limit circulations (Wu, 1988).

The deficit is expected to increase as, even with efforts by the government to encourage investment in more efficient plants, domestic production is unlikely to be over 650 000 tonnes/ year by 2000.

#### potential for increased NZ exports

At present, a potential for imports of 150 000 tonnes exists, the difference between demand and domestic supply. No estimate of future demand for newsprint has been made, but it is likely to be substantially higher by 2000 than the projected domestic supply of 650 000 tonnes. Thus, there is considerable scope for increased newsprint imports.

Tasman now exports between 0 and 12000 tonnes of newsprint each year. Volumes appear to depend on the demand from more established markets - no exports are likely to occur this year because of increased demand in Australia.

#### **4.4 Chips, Chipwood and Wood Pulp**

---

##### **potential for increased demand**

It is China's intention as stated in the 7th five year plan to increase the percentage of wood based pulp used, currently only approximately 20% of total pulp, so as to improve the strength characteristics and decrease the detrimental effects of agricultural residue removal and to double domestic production of paper and paperboard by the year 2000.

There is intensive competition for raw materials for the production of pulp; the result of which is a high cost for domestic raw material.

##### **potential for increased domestic supply**

The contribution of domestic plantations is not expected to be sufficient to meet pulp and chip demand.

##### **potential for increased NZ exports**

China has not imported wood chips in any significant amount and does not produce them to be marketed domestically (Widman Management, 1985).

Greater emphasis is expected to be placed on imports of pulp because the infrastructure, particularly energy supply, required to process chips and chipwood will not be available. Despite the shortage of foreign exchange in 1986, the Packaging Import/ Export Corporation used its allocation to buy pulp rather than chipwood.

The chief problems with the importing of chips and pulp are the lack of bulk handling equipment at the docks, the difficulties of inland transportation to the mills and the relatively small consumption at each mill. Investment in ports and the transport system and in large, efficient paper mills is improving the situation.

The value of NZ wood pulp exports to China has exceeded the value of all other NZ wood products combined for the last four years (see Section 3.3).

In the mid 1970's Tasman Pulp and paper started exporting small volumes handled by a UK company. Tasman now exports an average of 10,000 tonnes/year. This pulp has been received very favourably because of its high strength. Present exports are sold at international prices. ERLNZFP is also trading with China and currently sells unbleached kraft pulp.

A Canadian firm has formed a joint venture in China for the intransit processing of imported pulp. Given the perceived energy and water supply problems in China, this is rather surprising and probably reflects the company's desire to gain a foothold in China, rather than achieve high profits now.



## **4.5 Panelboards**

---

### **potential for increased demand**

Wood based panels are mainly used for interior decoration and furniture production; government policies prohibit structural use. Although there is considerable governmental interest in reconstituted wood products as a means of utilising wood waste, past experiences with poor quality boards have left a very negative impression in the minds of consumers (DBC Associates, 1986). However, with the increasing use of synthetic resins (now 90% of production), demand for plywood and other boards is increasing.

Consumption of MDF in China is expected to reach 500 000 m<sup>3</sup> in 1990 due to increasing industrial demand (Wang and Huang, 1986).

The cost of manufacturing has been increasing in Taiwan and investors there are looking for cheaper locations. With the warming of relations between China and Taiwan, it is likely that Taiwanese investors will look to China as a manufacturing base. The larger furniture production industry in China which will result from this switching of investment is expected to increase demand for wood panels beyond China's production capacity (Bruce Mackin pers. comm.).

### **potential for increased domestic supply**

The state is encouraging the development of the wood based panel industry with financial and technical assistance. Under the 7th Five Year Plan, the Ministry of Forestry plans to increase total annual wood panel production to 2.2 million m<sup>3</sup> by 1990 and 4 million m<sup>3</sup> by 2000.

Reported production capacity already exceeds 2.5 million m<sup>3</sup> and with the recent purchasing of foreign lines, especially of particle board and fibreboard, the target should be attainable.

The volume of MDF is currently low but, with the high levels of investment, total annual capacity is expected to be 440 000 m<sup>3</sup> by 1990. High profits compared to solid wood products manufacture have stimulated this investment. The price of MDF in August 1986, was US\$240/m<sup>3</sup> while particle board was US\$ 160/m<sup>3</sup>.

The annual production capacity of plywood plants in 1985 was 826 000 m<sup>3</sup>, while the total production was estimated at 520 000 m<sup>3</sup>. The rate of growth in the plywood manufacturing industry will be slow because of the lack of availability of suitable domestic logs and the higher cost of imported logs. However the Ministry of Forestry is planning to continue installing a few new plywood lines to partly satisfy the increasing demand.

#### **potential for increased NZ exports**

Plywood accounts for 90% of the total volume of imported panel products. 1 million m<sup>3</sup> of plywood was imported in 1986. This was virtually all thin (3-4mm 3-ply) panels from Indonesia, with small quantities from Malaysia, the Phillipines and Taiwan. Most of the SE Asian hardwood plywood is of poor quality. The predominant use is furniture.

Thick softwood plywood has been imported in small quantities from NZ. It is mainly used for concrete forming and, as for the SE Asian plywood, its low price is a major attraction.

Fletcher Wood Panels is currently exporting significant quantities of particleboards which can be used as a cheap substitute for plywood in furniture manufacture. A recent visit found that many of the users were using the product in exactly the same way as plywood and were dissatisfied when it did not perform to the same standard. It is acknowledged by Fletcher Wood Panels that consumer education is required but the size of the market makes this very difficult. MDF panels are also exported (Bruce Mackin pers. comm.).

There is scope for expanding sales of MDF to China. Planners in the China Timber Corporation regard imports of panel products which they plan to manufacture in China as an important stage in developing consumer acceptance of their own production.

Prices obtained on the Chinese market compare favourably with those achieved in Taiwan. However it is felt that once exporters make a commitment to the Chinese market, this price advantage will disappear (Bruce Mackin pers. comm.).

At present, NZ suppliers can not produce the large volumes required to meet Chinese orders. The prospect of dealing with endusers directly is regarded favourably as it is likely to result in smaller orders and allow better care of the customer.

The Chinese market has been regarded as a "spot market" at least as far as Fletcher Wood Panels is concerned. With strong demand from more traditional trading partners there has been no need to spend the large amount of time and money required to develop the Chinese market.

### Investment opportunity

In the Record of Discussion Concerning Cooperation and Exchange in the Field of Forestry Between China and New Zealand (FRI, 1986b) China offered NZ the opportunity to invest in a sliced veneer mill in North East China where species of ash, birch and oak are available for the production of high grade veneers. New Zealand would have the option of using the veneers to overlay New Zealand produced MDF board. The product could then be sold on the world market. The estimated capital required from NZ was US\$3 million.

A feasibility study was to be made but there is no record of any progress.

## 5. Summary and Recommendations

---

## Summary

China is not an easy market for New Zealanders selling forest products with its

- \*rapidly changing laws,
- \*shortage of foreign exchange
- \*enormous bureaucracy
- \*different language and culture and
- \*inadequate infrastructure

In addition, many other forest products exporting nations wish to become established in this rapidly growing market. Some of these countries have more political influence and funds for market development than NZ and others are more willing to enter into countertrade agreements.

However with one quarter of the world's population, a rapidly rising standard of living and insufficient forest resources for at least the next fifty years, it is a market which NZ can not afford to ignore.

It is difficult to serve a market when so little is known about it. Inadequate information exists for any reliable quantification of demand on a national scale. Of even more importance to exporters is the lack of information on the provincial scale.

Aim 1 To find if China presents marketing opportunities to sellers of radiata pine.

The opening of the economy to the world has not suddenly made opportunities obvious. It is predicted that market analysts will continue to make only vague statements to the effect that China is a market of great potential for several years yet.

Logs - The potential for log exports is excellent although there will be strong competition. Promotion of radiata as a

versatile, quality wood will be important to overcome some negative feelings towards the species which exist. Although only the three large forestry companies are interested in China at present there is potential for smaller growers to export logs by forming a cooperative and perhaps, by taking advantage of CITIC's willingness to make long term stumpage agreements (page 23). The exporting of high quality logs for plywood production appears to have much potential.

Sawn Timber - There is predicted to be a shortage of processing facilities in China creating opportunities for sawn timber exports. At present, very little standardisation of sawn timber sizes and grades exists although both Canada and the USA are working to improve this. NZ will have to adapt to whatever becomes the accepted sizes. Although there is a great unmet demand for furniture, NZ exports of finished items are unlikely to occur because of the high tariffs which the products would face. However, as the Chinese government intends to develop furniture production as a major export industry, furniture components may find a market.

Paper, Chips and Pulp - Demand for paper is predicted to increase greatly. NZ pulp is regarded highly and will continue to be one of NZ's major exports to China as there is a deficit in domestic raw material. A shortage of processing facilities is expected not to favour chip exports. Finished paper will also be a growth market.

Panelboards - The Chinese government is expanding domestic production and in the long term it is likely that China will become largely self sufficient in panelboards although not in the raw materials for them. The Chinese government intends to use imported products to create markets for the intended domestic

production. Thus the short term prospects are very good, but in the longer term it is likely that only speciality products will be imported.

Aim 2: To find out what NZ exporters are doing to pursue the Chinese market.

Only large NZ companies appear to be serving the Chinese market, probably because of the high market development costs and the large quantities required to fill orders. There appears to be some shift away from the view that China is a convenient place to dispose of low quality stock in times of surplus towards a recognition of the long term importance of the market. However the panelboard industry still views the Chinese market as a spot market and prefers to allocate its market development effort to other markets which are seen to be of less difficulty and longer term.

Aim 3. Methods to Pursue the Chinese Market

This final aim of the report is covered in the next section.



The following list of actions will help NZ forest product exporters make the most of the advantages they have to take a larger, more long term slice of the Chinese market.

### **1. Do not treat China as one market**

China is a huge country, bigger than all of Europe and its range of climatic and topographic conditions, landuses and cultures are as diverse. Each of China's provinces is bigger than many of the countries with which NZ trades. Therefore NZ suppliers have sometimes had difficulty meeting the bulk orders they have been faced with and even more difficulty ensuring all endusers' needs are met satisfactorily.

With increasing decentralisation of import authority (Section 2.3), there are more opportunities for marketing products to meet the needs of customers in specific regions. Marketers need not, and should not, spread themselves thinly over the entire nation but instead concentrate on specific areas and niche markets. There will be increasing opportunities for small companies to export to China.

Little information on provincial requirements has been found in this literature review. Future market studies should therefore attempt to isolate demands and the production capacity for individual provinces.

It is obvious however that it is the coastal provinces where importing will be easiest, where personal incomes will be highest and where most effort in market development will be spent.

Exporters should also offer a range of qualities. China is not an exclusively low quality, low value commodity market. An increasing range of personal incomes is resulting in a demand for products at the top end of the market.

## **2. Provide technical assistance**

The NZ Wool Board has become a highly successful exporter to China, partly because it has the right products at the right prices and partly because market development has included technical cooperation between the Wool Board and China's textile industry (Mortlock, 1987). NZ exporters of P.radiata products should follow this example in providing technical backup.

Effort is required to raise the image of radiata before the neagative attitudes expressed by Tuhsu, the log importing authority, and some users, become deeply entrenched. To do this it willbe necessary to emphasise the importance of preservative treatment in the utilisation of radiata.

## **3. Co-operate with other NZ exporters**

To compete against the United States and Canada, nations which have made an enormous commitment to market development in China, NZ companies must join forces. Already three major forestry companies have cooperated to a large degree to make the most of limited resources for market development in the sales of logs by preparing brochures and videos in Chinese on the versatility of radiata, sharing market information and jointly funding market development trips to China.

#### **4. Make full use of Tradecom and the NZ-China Trade Organisation**

These two organisations have great experience in the Chinese market.

New Zealand exporters may also wish to make use of the Standards Association of New Zealand. A branch of this organisation is the Technical Help to Exporters which spent some time in China in 1987 updating information. Because of the rate of change in China's requirements they will not be publishing their findings but will instead produce reports for specific requirements.

#### **5. Host delegations of decision makers to NZ**

Getting both the factory managers and the import authorities to come to NZ to see the versatility of radiata and the commitment to a sustained resource is a very worthwhile exercise (Chas Kerr, pers. comm.). This gives the Chinese a chance to see what New Zealanders do with radiata and lets them pick out the uses and techniques which will fit their requirements. From the literature it appears this type of marketing has not been used greatly by competitors. There are difficulties in arranging the visits but they are undoubtedly successful in creating a favourable trading environment.

#### **6. Consider the countertrade opportunities**

It is understandable that NZ companies would prefer simple cash sales. However any trading scheme which saves China foreign exchange will be favoured by Chinese authorities. The exchange of NZ

2.4). This scheme may have some potential for NZ companies which have previously imported SE Asian logs and now face a much restricted supply.

### **7.Consider investment in forest product processing in China periodically**

The environment for foreign investment in China has improved markedly over the last three years (see appendix 4). It is believed that the time is right for some commitment from NZ forest product companies to an involvement in the development of processing in China. There is no doubt that the interest from the Chinese side is there. Already, American, Canadian, Scandanavian and Japanese companies have invested heavily in the forest product industry seeking a presence in the market which has the greatest potential for growth of any.

Investment in, for example, a sawmill with the capacity to kiln dry in the forestless coastal provinces would ensure a continued demand for NZ radiata. It would also ensure the technology necessary to produce consistently high quality end products is applied.

Another option for investment is a lamination plant. Chinese visitors to NZ have expressed great interest in laminated products which are not produced in China.

For companies considering joint ventures in China there are several options. If they have a proposal, the China Unit of Tradecom would be the first organisation to visit for advice on who to approach in China. The China Unit, through the New Zealand embassy in China,

also hears of joint venture opportunities from time to time. A subscription to the China Clipper - a compilation of news reports of interest to New Zealanders - and the China Unit News - both published by the China Unit, would help keep a company up to date on joint venture opportunities.

The United Nations Industrial Development Organisation organises Investment Promotion Meetings for China from time to time. An industrial investment project promotion meeting is to be held at Hanover in April 1989. A list of the projects can be obtained from Richard Line, the coordinator for the Asia and Pacific Region Investment Project Identification and Formulation Branch (see appendix 1).

Even if it is decided that no investment will be made in the Chinese forest product processing industry now, this decision should be reviewed periodically as investment conditions in China are improving rapidly.

## **References**

- Asian Wall Street Journal** 10 May China's electricity up
- Beijing Review** 1987 October 19 Provisions for Supervision and Control over the Quality of Import Commodities
- Bezai Uikuri** 1983 Continuing Growth in the Chinese Timber Market. 12 December 1983
- Bourke, I** 1987 An Appraisal of Export Markets for Forest products. 56th ANZAAS Conference
- Bourke, I (ed)** 1988 Export prospects for Radiata pine. FRI Bulletin 136
- Bourke, I.** 1988b Trade Barriers and Forest Product Exports NZ Forestry May 1988
- Business China** 1987 August 17
- Chan, S** 1987 Capitalising on the Asian Building Boom - HongKong  
Export News Tradecom 1/1987
- Chen,Q** 1988 Slow Machinery Sales At Fair China Daily 4 May 1988
- China Daily** 1987 Paper Mills Seek More Cooperation 19/9/87
- China Daily** 1987b 17 August
- China Daily** 1988 Price Rises Start Panic Buying. 9 May 1988
- China Daily** 1988b Building projects in capital City Cancelled 20 May 1988
- China Daily** 1988c Deng Says China Is Set To Carry Out Reforms 4 June
- China Daily** 1988d New Rules Released on Customs 21 May 1988

**China Daily 1988e** State Acts to Reform Foreign trade

**China Daily 1988f** 21 May Foreign Ventures gain more rights

**China Reconstructs 1987** June

**China Reconstructs 1988** April pg. 63 "Economic Indicators Up"

**China Reconstructs 1988b** March China's Socialism : The Primary Stage

**DBC Associates 1986** The National Forest products Association 1986 China Forest Products Market Research Report Volume 1

**Dong, L. and Guo, Z. 1988** China to Link Price Reform With Change Of Wage System. China Daily 7 June 1988

**Drake 1984** Prospects and problems for North American Exports to pacific Rim Countries. in International Forest products Trade; Resources and Market Opportunities. Dickerhoof, Robertson, White.

**Far Eastern Economic Review 1987** Asia Year Book

**FAO 1986** The outlook for pulp and paper to 1995. Projections of worldwide demand and supply- Implications for capacity and worldwide trade.

**FAS 1986** Wood market reports Report code 55A 07/02/86

**Fenton, R. 1984** Sawn timber in Japan and NZ Prospects. Progress report. NZFS. FRI Bulletin 96

**Flora, D 1986** Markets for radiata pine logs as seen from that other softwood region May 1986 NZ Forestry

**Flora,D and Vlosky, R 1986** Potential Pacific Rim Demand for Construction - grade Softwood logs. United States Forest Service. University of Washington. Centre for International Trade in Forest products.

**Foreign Affairs and Defence Committee 1986** On the Inquiry into the NZ-China Relationship. Second Session Forty First Parliament (Helen Clark Chairman).

**FRI 1986** A NZ China Relationship in Forestry. A Draft NZ Strategy.

**FRI 1986b** Record of Discussion Concerning Cooperation and exchange in the field of forestry between China and NZ October 1986

**Guo,Z. 1988** Unexpected Price Hikes Put The Squeeze On Consumer. China Daily 24 February 1988

**Johnston, Trewin, Chapman 1985** China's Changing Economic Policies : 1985 Some Implications for Agriculture Bureau of agricultural Economics. Canberra

**Levack, H 1986** Forestry Handbook NZ Institute of Foresters Inc.

**MOF 1988** The Forestry Sector in NZ. Policy Division

**Mortlock 1987** China: the Awakening Giant Export News January 1987

**New Scientist 1987** April

**New Zealand Foreign Affairs Review 1986** Asia - Region of vitality  
Volume 36 No. 3

**New Zealand Foreign Affairs Review 1987** Select committee report on China Volume 37  
Number 2

**New Zealand Herald 1988** 11 February



- NFPA 1986** China: US Wood Market for the future. Report of the Key Industry Government Mission to the PRC. 1985
- Random Lengths 1984** September 12 Random Lengths Export Market Report
- Richardson, S 1986** The Cotchell Report Cotchell Pacific Ltd.
- Shiraishi, K. 1985** Chogoku no mokuzai jukyu no genjo in Beizai Uikuri No.470
- Shulin, 1985.** Holding the line on Population Growth. China Reconstructs March 1988
- Sigang, H 1987** China will update paper production 10/12/87
- Sigley 1988** Report on China Visit April 5<sup>th</sup> to the 18<sup>th</sup>
- South China Morning Post 1987** August 3
- Sun,Z 1987** Unpublished report. Economics and Social Sciences division FRI.
- Tian, Y 1988** Wasting Raw Materials on PopTop Cans China Daily 22 May 1988
- Thomson, R 1988** Great Wall of Inflation The Dominion Sunday Times May22
- Tradecom 1987** China Unit News October 1987
- Tradecom 1988** China Unit News August 1988
- Wang and Huang 1986** MDF Output Expands with China's Economy World Wood August
- Westman, W 1986** A Guide to Exporting Solid Wood Products United States Department of agriculture Foreign Agricultural service Forest products division Agriculture handbook No., 662

- Widman Management 1985** Canada's Forest Industry  
Markets 85-88  
China and the Forest Industry
- Wu, X. 1988** Newsprint Panic Hits Press China Daily 23 June  
1988
- Xinhua 1987** September 6
- Xinhua 1988** June 20 China's Millionaires - From Rags To  
Riches.
- Xinhua 1988b** March 16 China needs more paper.
- Xinhua 1988c** May 22 Enterprises allowed to manage  
foreign trade.
- Xinhua 1988d** 13 February China steps up massive tree-  
planting campaign
- Xinhua 1988e** 19 February Every family to have an  
apartment by 2000
- Xinhua 1988f** 23 March Campaign started to crack down  
illegal logging
- Zhu, X., James, L., Hanover, W. 1987** Timber supply and  
Demand in China - Will future yield exceed  
consumption Journal of Forestry. USA.  
January 1987
- Xu, Y 1988** 16 March Three problems hinder Chinese economy  
- Rong China Daily
- Zhong, X 1985** China aims to double consumption. Pulp and  
Paper October 1985

## **Appendix 1**

---

### **List of People Interviewed for this report**

The following people gave their time, knowledge and opinions in discussions or correspondence with me. Their help is greatly appreciated.

Ross Cooper - Manager Export Division NZ Forestry Corporation Ltd  
PO Box 10-310 Wellington

Peter Landon Lane - Marketing Manager,  
China Unit. NZ Trade Commission  
Private Bag Wellington. Telephone (04) 742 600

Bruce Mackin - Fletcher Wood Panels. Auckland.

Jeff Bramble - Tasman Forestry. Rotorua

Chas Kerr - Technical Development Officer. Tasman Forestry.  
Rotorua

Paul Simkin - Export Manager Tasman Pulp and Paper Company Ltd  
Po Box 2186 Auckland Telephone (09) 792 989

Bruce Mackin - Fletcher Wood Panels

Jim Bourke - Section Leader Marketing Division.  
Forest Research Institute

David Oram - President NZ-China Trade Association

Richard Line - Coordinator for the Asia and Pacific Region  
Investment Project Identification and Formulation  
Branch. Industrial Investment Division, United Nations  
Industrial Development Organisation.  
P.O box 300 A-1400 Vienna Austria.

Jim Elder - Mayor of Tokoroa. P.O.Box 440 Tokoroa

K. Trevelyan - Technical Help to exporters.  
Standards Association of New Zealand.  
Private Bag, Wellington.

Ross Jansen - Mayor of Hamilton. Private Bag, Hamilton

Sun Zhi Qiang - "Research Fellow". Institute of Forstry Economy.  
National Academy of Forestry.  
Ministry of Forestry.  
PRC

## Appendix 2

---

### Justification of predicted trends in New Zealand domestic supply and demand

Indigenous supply - Although NZ has a greater area of indigenous forest than exotic forest, the indigenous resource contributes only 6% of the annual wood yield (MOF, 1988). Only a very limited area of the indigenous forest is available for wood production and when the state contracts to supply West coast sawmills with rimu expire in 1990, this will decrease further. The other main sources of indigenous timber, private beech forests currently cut for export chips and private tawa forests cut for pulp, are unsustainable and increasingly subject to constraints precipitated by environmental lobbies.

With the current structure of DOC, further investigations into sustained yield management of indigenous forests is impossible. As the politicians perceive the main body of public opinion being opposed to the harvesting of native forests this situation is unlikely to change dramatically before the year 2000. Therefore supplies of indigenous timber will decrease to a low level.

Imported Wood Supply - The current volume of roundwood equivalents imported is 600000m<sup>3</sup> and it is assumed that this level will be maintained. Although the domestic producers will be keen to push *P.radiata* as a substitute where ever possible, there will always be niche markets requiring particular imported species. It is expected that any success in substituting *P.radiata* will be balanced by the increased quantities of decorative wood required to take the place of dwindling supplies of native timbers.

Domestic Wood Supply - The consensus of several sources is that the NZ produced exotic log supply will double to approximately 20 million m<sup>3</sup> by the year 2000. Of this approximately 3 million m<sup>3</sup> will be from pruned trees compared to the present 0.4 million m<sup>3</sup>. Over 95% of the exotic plantation resource is *P.radiata* and the species accounts for an even greater percentage amongst the younger age classes.

Domestic Demand - Domestic demand is predicted to remain around 6.7 million m<sup>3</sup> per year (MOF,1987). This is because the population is not expected to change significantly and the per capita consumption rates of wood products are already very high. Increases in volumes used due to new uses being found are expected to be balanced by more efficient use of wood in existing industries and less construction.

Export Potential - From the graph in Section 3.1 it is obvious that with a static domestic demand and rapidly increasing domestic exotic forest supply, the result is a surplus which is available for export. This surplus is estimated to be around 13 million m<sup>3</sup> by the year 2000.

### **Appendix. 3**

---

#### Tariffs on Imported Forest Products (1988)

	Total Tariff (import duty + import tax)
Softwood logs or rough squares	13%
Roughsawn timber	19%
Planed or grooved sawn timber	50%
Plywood	15%
Veneers	40%
Rail ties	14%
Fibreboard and particleboard	30%
Furniture	up to 150%

## Appendix 4

---

### The Environment for Foreign Investment in China

#### 1. Approval procedures

Approval of foreign investment has been decentralised and approval criteria simplified. Shanghai and Tianjin are entitled to approve items under US \$30 million on condition that the needed raw materials, fuel, power and transportation do not have to come from normal state allocations. Beijing, Liaoning, Dalian, Guangdong and Fujian are entitled to approve items under US \$10 million. Other provinces, autonomous regions and key cities have the right to approve items under US \$5 million. This innovation has shortened the approval time for a foreign venture in China to as little as one month. The time limit for approval of foreign ventures is, by law, no more than 3 months - a considerable advance on the past when the approval procedures for a wood panel plant took four years.

#### 2. Mediation Authority

To streamline administration of foreign investment projects, a 'Leading Group for Foreign Investment' which oversees policy implementation and mediates major disputes has been set up. Guangdong, Fujian, Shanghai and Tianjin have also set up their own boards which work to improve the environment for investment by eliminating delays and cutting red tape.

#### 3. Employment of staff

Labour productivity has been described as poor in Business China Aug 17 1987. However enterprises with foreign investment may now determine their own personnel requirements. They can dismiss workers and decide the pay scale of workers, although it must not be lower than 120% of the average level of state-run enterprises in their respective localities (China Daily, 1988).

#### 4. Percentage of company owned by foreign organisation

In 1984 solely owned foreign ventures were permitted.

#### 5. Improvement in the industrial infrastructure

Transportation, communication and energy supply systems are often inadequate. The 7th Year Plan has made development of the infrastructure a top priority and improvements are being made. China's electricity production increased 11% from April 1987 to April 1988 (Asian Wall Street Journal, 1988).

Enterprises with foreign investment have priority rights to water, power and other materials and pay at the same rate as China's state



owned enterprises, which is much less than Chinese entrepreneurs pay (Far Eastern Review, 1987).

#### 6. Extension of the Time Limit for Chinese Foreign Joint Ventures.

In 1986 the timelimit was increased from 30 years to 50 years.

#### 7. Inadequate Legislation

In the past there has been a lack of regulations and so a lack of consistency regarding foreign importers and investors. there are now 160 laws and regulations concerning economic activities by foreigners. However, many of these laws are more accurately descibed as guidelines rather than enforceable rights and obligations.

#### 8. Special Economic Zones and Cities

In 1979 China established four Special Economic Zones (SEZs); Shenzhen, Shantou, Zhuhai and Xiamen. These areas are allowed considerable autonomy in giving preferential treatment to foreign investors. In 1983 and 1984 the government also opened 14 coastal cities, including Shanghai, Tianjin and Dalian, as well as Hainan Island. In February 1985, the Chang jiang delta near Shanghai, the Zhujiang delta near guanghou, and the Minnan near Xiamen were added to the list of open areas. See figure 10 for the location of the open areas.

Zhao Ziyang has said that the open policy is expected to extend progressively, from the SEZ regions to coastal cities, then to coastal economic regions and finally to interior regions.

China's special economic zones face increasing competition from some of the country's coastal cities and inland provinces, but still enjoy the most economic freedom (South China Morning Post, 1987). Foreign ventures in the SEZ and Economic and Technical Development Zones (ETDZ) in the 14 open cities are subject to a profit tax of 15% while joint ventures in inland regions are subject to a 30% profit tax and wholly owned ventures face taxes of between 30 and 50%. However, any venture involving foreign funds which produces exports is only subject to a 15% tax irrespective of its location.

FIGURE 10

CHINA'S SPECIAL ECONOMIC ZONES  
AND 14 OPEN COASTAL CITIES



#### 9. Reduction in Taxes

Joint ventures which will exist for more than 10 years are exempt from enterprise income tax for the first two years, with a deduction of half the amount due for the next three years. A joint venture of more than 15 years duration is freed from income tax for the first five years and for the next five years pay only half the regular rate. Land use fees have been reduced from up to 300 yuan/m<sup>3</sup> to between 5 and 20 yuan a year/ m<sup>3</sup> for enterprises in urban areas ( China Daily, 1987b).

#### 10. Opening of the Domestic Market

The products of foreign enterprises in China can now be sold in China provided they are introducing new products that china does not have, or products which can repalce those that now need to be imported (China Reconstructs, 1987).

## **Appendix 5**

---

NZ Imports from the PRC 1987-88

(NZ \$M VFD)

source : Dept Of Statistics

Fruit, Nuts, Vegetables	1.0
Tea	3.89
Other Food and Beverages	2.13
Oil seeds	1.44
Animal Hair and Bristles	1.04
Industrial Raw materials and Primary Products	6.12
Petroleum	22.47
Parafin Wax	1.45
Organic and Inorganic Chemicals	5.43
Total Textiles	2.49
Clothing and Footwear	27.68
Glasswear and Pottery	3.08
Miscellaneous Primary Manufactures	2.25
Machinery	4.29
Furniture	3.59
Toys, Games and Sporting Goods	4.76
Other	6.83